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RESEARCH MEMORANDUM

FORCE AND PRESSURE MEASUREMENTS ON SEVERAL CANOPY-FUSELAGE CONFIGURATIONS AT MACH NUMBERS 1.41 AND 2.01

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FORCE AND PRESSURE MEASUREMENTS ON SEVERAL CANOPY-FUSELAGE CONFIGURATIONS AT MACH NUMBERS 1.41 AND 2.01

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SUMMARY

An investigation has been conducted in the Langley 4- by 4-foot supersonic pressure tunnel on canopy pressures and canopy-fuselage forces and moments under conditions of combined pitch and sideslip. The canopy configurations tested varied in windshield shape (flat, vee-, and round), location on the fuselage, and fineness ratio. All configurations were tested at Mach numbers of 1.41 and 2.01 at Reynolds numbers of 1.74×10^6 and 1.44×10^6, respectively, based on fuselage major diameter.

Drags of the canopy-fuselage combinations varied from lowest for the flat-windshield configuration to highest for the vee-windshield configuration. For comparable canopies, the configurations with the forward canopy location produced less drag than those with the rearward-located canopies, regardless of windshield shape. The effects on drag of windshield shape and canopy location were diminished with increase in Mach number from 1.41 to 2.01.

INTRODUCTION

Because of the high air loads and temperatures associated with supersonic flight, the best compromise of aerodynamic, structural, and visibility requirements in the design of canopies for military aircraft is critically dependent on the accuracy with which loads and aerodynamic characteristics can be predicted. Since practical methods for the calculation of pressure distributions and forces on such arbitrary shapes are limited, experimental data are required. A few papers showing experimental results are at present available, among them references 1 and 2 which deal with pressure distributions of two rather specialized canopy configurations at supersonic speeds. Reference 3 is concerned with

transonic and supersonic drag comparisons of forward and rearward locations of a canopy on a finned test vehicle. A free-flight drag investigation of windshield-shape effects at transonic and low supersonic speeds is reported in reference 4. Reference 5 deals with the location of a canopy in order to improve the longitudinal development of cross-sectional area for a wing-fuselage combination at transonic speeds.

The present investigation is part of a program of the National Advisory Committee for Aeronautics to determine some of the effects at transonic and supersonic speeds of windshield shape, canopy location, fineness ratio, pitch, sideslip, and Mach number on the aerodynamic characteristics of several canopy-fuselage configurations and on the pressure distributions on the canopies. Reference 6 reports the force and moment characteristics at transonic speeds of some of the configurations of the present investigation. The present tests were made of models with flat, vee-, and round windshield canopies in forward and rearward locations on the fuselage. The fineness ratios of the various canopies were approximately 7.0, 10.0, and 12.0 (based on the ratio of the diameter of an equivalent body of revolution to the length of the canopy in the plane of symmetry). All configurations were tested at Mach numbers of 1.41 and 2.01 at Reynolds numbers of 1.74×10^6 and 1.44×10^6, respectively, based on fuselage major diameter. Two canopy-fuselage configurations and the fuselage alone were tested for angles of attack from -6° to 12°, and all configurations were tested at 0°, -4°, and -8° sideslip at both 0.4° and 6.5° angle of attack. In all tests, boundary-layer transition was fixed 1/2 inch behind the fuselage nose point by means of a roughness strip.

SYMBOLS

M	free-stream Mach number
q	free-stream dynamic pressure
p_o	free-stream static pressure
p	local pressure
P	pressure coefficient, $\frac{p - p_o}{q}$
α	angle of attack, deg
β	angle of sideslip, deg
x	distance from foremost point of canopy in plane of symmetry in an axial direction

x_b distance from fuselage nose point in an axial direction

l canopy-profile length in an axial direction

l_b fuselage length

ϕ lateral angle measured from plane of symmetry (see tables X, XI, XVII, and XVIII

A_b area of base of model

A_{max} maximum cross-sectional area of canopy or of a body of revolution

C_N normal-force coefficient, $\frac{Z}{qA_b}$

C_c axial-force coefficient, $\frac{X}{qA_b}$

C_Y lateral-force coefficient, $\frac{Y}{qA_b}$

C_m pitching-moment coefficient, $\frac{M'}{qA_b l_b}$

C_n yawing-moment coefficient, $\frac{N}{qA_b l_b}$

C_l rolling-moment coefficient, $\frac{L}{qA_b l_b}$

C_{D_f} drag coefficient, $\frac{D_f}{qA_b}$

C_D drag coefficient, $\frac{D}{qA_b}$

ΔC_D incremental drag coefficient, $\frac{D - D_f}{qA_b}$

C_{D_A} drag coefficient, $\frac{D}{qA_{max}}$

ΔC_{D_A} incremental drag coefficient, $\frac{D - D_f}{qA_{max}}$

X	force along body axis, positive when rearward
Y	force along lateral axis, positive when starboard
Z	force normal to XY-plane, positive when upward
D_f	force on fuselage alone in streamwise direction, positive when rearward
D	force in streamwise direction, positive when rearward
M'	moment about Y-axis, positive when tending to lift nose
N	moment about Z-axis, positive when tending to produce a right turn
L	moment about X-axis, positive when tending to produce a right bank
K	longitudinal location of maximum cross-sectional area, percent of length
P.L.	designation of canopy-fuselage parting line

MODELS AND INSTRUMENTATION

Basic Model and Canopies

The canopy shapes were tested on a drooped-nose-fuselage forebody having an elliptic cross section. Drawings and dimensions of this body, and the base plug which was used to minimize base-pressure corrections, are shown in figures 1 and 2. The various canopy configurations are described in figures 1 to 5. A family of six canopies of approximately the same size, fineness ratio (7.0), and profile was tested. Canopies with flat, vee-, and round windshields were tested at two longitudinal locations on the fuselage. Two smaller flat-windshield canopies of lower windshield slope having fineness ratios of about 10.0 and 12.0 were tested in forward and rearward locations, respectively, on the fuselage. These configurations, which are described in figures 4 and 5 approximate existing supersonic designs. Photographs of all the models are presented in figure 6.

Instrumentation

The forces and moments on the models were measured by means of a six-component strain-gage balance mounted within the fuselage. Moments were measured about a point on the model axis 14.81 inches from the nose.

Pressure instrumentation was provided in each model. The pressure orifices, which were encircled with ink prior to being photographed, may be seen in figure 6. This instrumentation was provided on only one side of the plane of symmetry so that both positive and negative sideslip angles were tested in order to determine the pressures on both the upstream and the downstream sides of the model for a given sideslip angle. The locations of the orifices for each model may be determined from tables X to XVIII.

Small prisms were mounted on the surface of the fuselage so that either angle of attack or angle of sideslip might be measured by a spectrometer head.

TESTS

Test Conditions

Mach numbers	1.41 and 2.01
Reynolds number per foot at M = 1.41	4.18×10^6
Reynolds number per foot at M = 2.01	3.46×10^6
Stagnation pressure, atm	0.95
Stagnation temperature, $^{\circ}F$	100

Corrections and Accuracy

Although force and moment data were taken at both positive and negative sideslip angles, the subsequent tabulations and plots show only one value for forces and moments and, essentially, only negative sideslip angles. Both sets of values, however, have been used; the data for all positive sideslip angles greater than 0.3° have been folded and averaged with data for negative angles.

Where angles of attack or sideslip could not be measured optically, the calibrated deflections of the balance under load were applied to the no-wind calibration of the angle mechanism so that the estimated angle accuracy was within $\pm 0.15^{\circ}$.

Base-pressure measurements were made and axial-force data were corrected to correspond to a base pressure equal to free-stream static pressure.

The force and moment coefficients are believed to be correct within the following limits:

C_N	±0.0080
C_c	±0.0040
C_m	±0.0020
C_l	±0.0015
C_n	±0.0040
C_Y	±0.0095
C_D	±0.0040

RESULTS AND DISCUSSION

Force and Moment Data

The six force and moment coefficients based on the body-axis system plus the drag coefficient based on the wind axis are tabulated and presented in tables I to IX for all model configurations. Because of the large amount of data and because drag considerations appear of greatest general interest, incremental drag coefficients (difference between the drag coefficients for the body alone and those for a canopy-fuselage combination) are the only force data discussed.

Figure 7 shows incremental drag coefficients plotted against sideslip angle for all canopy-fuselage configurations at various Mach numbers and angles of attack. Drags of the configurations with the three windshield shapes varied from the lowest for the flat-windshield configurations to the highest for the vee-windshield configurations except for the configurations with the forward-located canopies at $M = 2.01$ where the differences were about the same as the estimated possible inaccuracies of the data. For example, at $M = 1.41$ and $\alpha = 0.4°$ for the forward-located canopy, the incremental drag coefficient for the flat-windshield canopy was about 75 percent of that for the vee-windshield canopy. For the large canopies, the configurations with the forward-located canopies produced less drag than those with the rearward-located canopies, regardless of windshield shape. The effects of both windshield shape and canopy location were less at $M = 2.01$ than at $M = 1.41$.

For the small canopies, the effects of location are not readily apparent in figure 7 because of differences in fineness ratio and size. In order to obtain an indication of the effects of position and fineness ratio for the flat-windshield canopies, incremental drag coefficients for zero angle of attack and sideslip were based on the maximum cross-sectional areas of the canopies themselves and are given in the following table:

Flat-windshield canopy				ΔC_{D_A} at -	
Size	Location	Fineness ratio	A_{max}, sq in.	M = 1.41	M = 2.01
Large	Forward	6.91	2.59	0.360	0.436
Small	Forward	10.04	1.49	.237	.312
Large	Rearward	7.06	2.46	.535	.543
Small	Rearward	12.06	1.03	.351	.381

It is apparent from this table that the forward location was also the more favorable for the small canopies. Reference 3 which presents transonic and supersonic drag comparisons of forward and rearward locations of a canopy on a finned test vehicle indicates that in the low supersonic range a rearward canopy location produces less drag. This is in contrast to the indications of the present investigation.

The M = 1.41 values from the preceding table have been plotted for all the flat-windshield configurations in figure 8 which also shows from reference 7 some M = 1.40 drag values for bodies of revolution having various locations of maximum cross-sectional area and various fineness ratios. It should be noted that the data from reference 7 are concerned with drags of bodies alone; whereas, the present data relating to canopies include mutual interference effects. Figure 8 seems to indicate that interference effects for the forward-located canopies were small compared to interference effects for the rearward location. Figure 8 also appears to show that the drag differential between the large and small canopy configurations is principally a fineness-ratio effect. The location of maximum cross-sectional area (K in fig. 8), which would in most cases be closely related to windshield slope, would be governed largely by visibility requirements. It would appear that an efficient canopy shape on a canopy-fuselage combination would require a low windshield slope and a fineness ratio of 10 or more.

Pressure Data

All pressure coefficient data for each configuration are presented in tables X to XVIII from which plots of pressure coefficient may be readily made along longitudinal meridians or radially about a particular station. Plots of these coefficients along longitudinal meridians (see tables X, XI, XVII, and XVIII for description) are presented against axial location for various angles of attack and sideslip and for Mach numbers of 1.41 and 2.01 in figures 9 to 17.

Figure 9, 10, 11, and 12 show the pressure-coefficient distributions for the large canopies at Mach numbers of 1.41 and 2.01 and indicate that pressure distributions over the aft portions of the canopies were generally not significantly influenced by windshield shape. Local peak suctions were generally highest for the vee-windshield configurations although the large flat-windshield configurations began to show appreciable peaks as sideslip angle increased.

Figures 13 and 14 show pressure-coefficient distribution for the small canopies and for the fuselage alone. These, in addition to figures 9 to 12, show that suction peaks in pressure-coefficient distributions at $M = 2.01$ are generally smaller than those at $M = 1.41$, although the character of the remainder of these distribtuions at low sideslip angles, especially for positive coefficients, remained much the same. Figures 15, 16, and 17 show the effects of angle of attack on pressure-coefficient distributions for a forward-located round-windshield canopy, a rearward-located round-windshield canopy, and the fuselage alone, respectively. The variation of pressure coefficients over this range of angle of attack (-6.0° to 12.0°) appears to be systematic for these configurations.

Force and Pressure Correlation

A comparison of force and pressure-measurement results was made where there existed identical conditions of pitch and sideslip near zero angle of attack for both force and pressure data. Measured fuselage-alone axial-force data were diminished by the axial forces integrated from the limited pressure data on the fuselage within the area which would be covered by the canopies. The axial forces from pressures on the canopies were added to these corrected fuselage axial forces so that integrated configuration drags for the canopy-fuselage combinations resulted. These integrated values are compared with drag coefficients from force measurements in the following table:

Canopy configuration	Drag coefficient, C_D			
	M = 1.41		M = 2.01	
	Measured	Integrated	Measured	Integrated
Large forward flat	0.1695	0.1719	0.1900	0.1813
Large forward vee-	.1879	.1883	.1971	.1900
Large forward round	.1781	----	.1954	.1800
Large rearward flat	.1927	.1772	.2034	.1831
Large rearward vee-	.2178	.1893	.2160	.1933
Large rearward round	.1982	.1802	.2087	----
Small forward flat	.1328	.1417	.1475	.1424
Small rearward flat	.1342	.1289	.1420	.1365

The appreciable difference between measured and calculated forces for most of the rearward-located canopies gives credence to the supposition of larger fuselage interference effects for these rearward locations in the previous discussion of force data. In the tabulation both force and pressure-measurement results indicate that the flat-windshield canopy configurations produced less drag than the vee-configurations. The lower chord force for the flat-windshield canopy is associated with the expansions around the edges of the windshield resulting in lower pressures over the remaining two-thirds (approximately) of the canopy frontal projection. This effect is seen in figures 18, 19, and 20 which show pressure contours on half the frontal projections of the forward-located large canopies, the rearward-located large canopies, and on the small canopies, respectively. In contrast to those for the flat canopies, it is indicated by the vee-canopy contours that the expansion around the edges of the vee-windshield has little effect on forces in an axial direction. In reference 4 the drag increments for the flat-windshield canopies of comparable windshield-profile slopes were higher than for the vee-windshield canopies, in contrast to present results; however, the frontal-areas of the flat windshields of reference 4 contributed nearly all of the total canopy frontal-area so that expansions around the windshield edges could not produce reductions in canopy drags.

CONCLUSIONS

Force and pressure measurements have been made on several canopy-fuselage configurations which varied in windshield shape (flat, vee-, and round), canopy location on the fuselage, and fineness ratio. All configurations were tested in pitch and sideslip at Mach numbers of 1.41 and 2.01 for values of Reynolds number based on fuselage major diameter of 1.74×10^6 and 1.44×10^6, respectively. The results of the tests on these configurations indicate the following conclusions:

1. For canopies which varied only in windshield shape, drags were lowest for the flat-windshield configuration and highest for the vee-configuration.

2. For comparable canopies, the configurations with the forward canopy locations produced less drag than those with the rearward-located canopies, regardless of windshield shape.

3. Both the effect of windshield shape and of canopy location were diminished with the increasing of Mach number from 1.41 to 2.01.

Langley Aeronautical Laboratory,
National Advisory Committee for Aeronautics,
Langley Field, Va., August 11, 1955.

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TABLE I.- FORCE AND MOMENT COEFFICIENTS FOR BODY ALONE

M	α, deg	β, deg	C_N	C_c	C_m	C_l	C_n	C_Y	C_D
1.41	0.4	0	.0052	.1101	-.0274	-.0002	.0013	.0104	.1101
1.41	0.4	-4	.0051	.1087	-.0278	-.0020	.0437	.2082	.1230
1.41	0.4	-8	.0026	.1044	-.0293	-.0041	.0870	.4486	.1659
1.41	0.4	0	.0000	.1094	-.0274	-.0002	.0013	.0124	.1094
1.41	6.5	0	.2234	.1075	.0179	.0001	-.0049	-.0052	.1321
1.41	6.5	-4	.2195	.1033	.0180	-.0061	.0427	.2166	.1423
1.41	6.5	-8	.2310	.0968	.0166	-.0121	.0831	.4692	.1865
1.41	6.5	0	.2234	.1072	.0180	.0002	-.0049	-.0052	.1318
1.41	-6.0	0.3	-.2312	.1104	-.0741	-.0001	-.0007	-.0188	.1341
1.41	-3.0	0.3	-.1233	.1130	-.0509	-.0001	-.0021	-.0188	.1194
1.41	0	0.3	-.0154	.1100	-.0276	.0000	-.0035	-.0177	.1101
1.41	3.0	0.3	.0899	.1098	-.0052	.0002	-.0052	-.0167	.1144
1.41	6.0	0.3	.1979	.1067	.0177	.0004	-.0065	-.0177	.1269
1.41	9.0	0.3	.3210	.0986	.0377	.0007	-.0076	-.0188	.1477
1.41	12.0	0.3	.4675	.0922	.0558	.0013	-.0095	-.0271	.1875
2.01	0.4	0	-.0250	.1189	-.0330	-.0001	-.0009	-.0050	.1187
2.01	0.4	-4	-.0203	.1220	-.0335	-.0020	.0391	.2348	.1380
2.01	0.4	-8	-.0343	.1179	-.0351	-.0041	.0745	.5284	.1901
2.01	6.5	0	.2399	.1162	.0083	.0001	-.0032	-.0088	.1426
2.01	6.5	-4	.2463	.1111	.0073	-.0060	.0382	.2581	.1559
2.01	6.5	-8	.2635	.1069	.0048	-.0116	.0663	.5686	.2139
2.01	-6.0	0.3	-.2908	.1296	-.0763	.0001	-.0005	-.0063	.1593
2.01	-3.0	0.3	-.1532	.1219	-.0547	.0000	-.0021	-.0127	.1298
2.01	0	0.3	-.0312	.1178	-.0338	.0000	-.0040	-.0164	.1179
2.01	3.0	0.3		.1205	-.0123	.0002	-.0059	-.0203	
2.01	6.0	0.3	.2188	.1169	.0073	.0005	-.0074	-.0266	.1393
2.01	9.0	0.3	.3749	.1102	.0239	.0008	-.0084	-.0355	.1677
2.01	12.0	0.3	.5439	.0908	.0354	.0012	-.0084	-.0469	.2021
2.01	0	0.3	-.0312	.1178	-.0338	.0000	-.0037	-.0152	.1179

TABLE II.- FORCE AND MOMENT COEFFICIENTS FOR CONFIGURATION WITH FORWARD-LOCATED FLAT-WINDSHIELD CANOPY

M	α, deg	β, deg	C_N	C_c	C_m	C_l	C_n	C_Y	C_D
1.41	0.4	0	-.0077	.1696	-.0072	.0001	.0011	.0073	.1695
1.41	0.4	-4	-.0116	.1780	-.0070	.0002	.0739	.2243	.1931
1.41	0.4	-8	-.0013	.1747	-.0078	-.0011	.1482	.5085	.2438
1.41	6.5	0	.2198	.1617	.0413	.0001	-.0040	.0062	.1855
1.41	6.5	-4	.2160	.1645	.0463	-.0025	.0661	.2774	.2068
1.41	6.5	-8	.2198	.1722	.0469	-.0044	.1263	.6454	.2839
1.41	6.5	0	.2173	.1625	.0414	.0001	-.0005	.0032	.1863
2.01	0.4	0	-.0374	.1903	-.0258	.0000	-.0010	-.0063	.1900
2.01	0.4	-4	-.0406	.1945	-.0271	.0009	.0689	.2544	.2115
2.01	0.4	-8	-.0686	.2019	-.0292	.0024	.1330	.5816	.2804
2.01	0.4	0	-.0437	.1931	-.0260	.0000	-.0015	-.0088	.1928
2.01	6.5	0	.2534	.1739	.0119	.0000	-.0037	-.0127	.2015
2.01	6.5	-4	.2635	.1733	.0099	-.0041	.0606	.3316	.2247
2.01	6.5	-8	.2315	.1826	.0105	-.0057	.1123	.7567	.3110
2.01	6.5	0	.2596	.1764	.0119	.0001	-.0038	-.0127	.2047

TABLE III.- FORCE AND MOMENT COEFFICIENTS FOR CONFIGURATION WITH FORWARD-LOCATED VEE-WINDSHIELD CANOPY

M	α, deg	β, deg	C_N	C_c	C_m	C_l	C_n	C_Y	C_D
1.41	0.4	0	-.0179	.1880	-.0096	.0001	.0022	.0073	.1879
1.41	0.4	-4	-.0154	.1965	-.0092	.0003	.0703	.2293	.2119
1.41	0.4	-8	-.0499	.1954	-.0051	.0011	.1434	.5045	.2634
1.41	0.4	0	-.0179	.1901	-.0093	.0001	.0005	.0051	.1900
1.41	6.5	0	.2148	.1776	.0397	.0001	-.0031	.0083	.2008
1.41	6.5	-4	.2148	.1823	.0414	-.0049	.0646	.2873	.2250
1.41	6.5	-8	.1752	.1825	.0483	-.0076	.1241	.6685	.2923
1.41	6.5	0	.2173	.1792	.0397	.0001	-.0032	.0073	.2027
2.01	0.4	0	-.0532	.1975	-.0268	.0000	-.0010	-.0063	.1971
2.01	0.4	-4	-.0516	.1964	-.0277	.0007	.0670	.2625	.2139
2.01	0.4	-8	-.0734	.2016	-.0293	.0020	.1280	.5878	.2810
2.01	0.4	0	-.0500	.1994	-.0268	-.0001	-.0012	-.0102	.1991
2.01	6.5	-4	.2593	.1751	.0083	-.0041	.0577	.3231	.2254
2.01	6.5	-8	.2358	.1834	.0100	-.0062	.1110	.7505	.3114
2.01	6.5	0	.2561	.1797	.0099	.0001	-.0050	-.0228	.2075

TABLE IV.- FORCE AND MOMENT COEFFICIENTS FOR CONFIGURATION WITH FORWARD-LOCATED ROUND-WINDSHIELD CANOPY

M	α, deg	β, deg	C_N	C_c	C_m	C_l	C_n	C_Y	C_D
1.41	0.4	0	-.0128	.1782	-.0054	.0001	-.0024	.0083	.1781
1.41	0.4	-4	-.0167	.1860	-.0054	.0003	.0737	.2316	.2016
1.41	0.4	-8	-.0256	.1881	-.0046	-.0012	.1441	.5106	.2572
1.41	6.5	0	.2170	.1686	.0425	.0001	-.0075	.0031	.1921
1.41	6.5	-4	.2158	.1704	.0442	-.0025	.0666	.2860	.2132
1.41	6.5	-8	.2043	.1743	.0502	-.0044	.1262	.6301	.2821
1.41	6.5	0	.2195	.1696	.0425	.0002	-.0075	.0010	.1934
1.41	0	0.3	.0410	.1812	-.0052	-.0002	-.0113	-.0073	.1812
1.41	3.0	0.3	.0693	.1768	.0187	.0001	-.0131	-.0094	.1802
1.41	6.0	0.3	.1926	.1707	.0417	.0006	-.0152	-.0125	.1900
1.41	9.0	0.3	.3286	.1655	.0627	.0010	-.0153	-.0406	.2151
1.41	12.0	0.3	.5032	.1494	.0779	.0015	-.0136	-.0750	.2511
1.41	-3.0	0.3	-.1489	.1850	-.0291	-.0003	-.0089	-.0135	.1926
1.41	-6.0	0.3	-.2696	.1857	-.0533	-.0002	-.0063	-.0125	.2129
1.41	0	0.3	-.0385	.1805	-.0051	-.0002	-.0114	-.0156	.1806
2.01	0.4	0	-.0499	.1957	-.0249	-.0001	-.0044	-.0038	.1954
2.01	0.4	-4	-.0468	.1958	-.0262	.0008	.0701	.2671	.2136
2.01	0.4	-8	-.0687	.2059	-.0284	.0028	.1322	.6021	.2872
2.01	0.4	0	-.0437	.1957	-.0249	-.0001	-.0044	-.0038	.1954
2.01	6.5	0	.2531	.1766	.0124	-.0001	-.0063	-.0152	.2041
2.01	6.5	-4	.2640	.1791	.0105	-.0041	.0603	.3385	.2310
2.01	6.5	-8	.2406	.1850	.0112	-.0060	.1107	.7459	.3128
2.01	6.5	0	.2593	.1775	.0125	-.0001	-.0064	-.0164	.2057
2.01	0	0.3	-.0593	.1952	-.0257	-.0002	-.0100	-.0216	.1953
2.01	3.0	0.3	.0781	.1856	-.0045	.0000	-.0126	-.0317	.1896
2.01	6.0	0.3	.2281	.1770	.0118	.0003	-.0143	-.0443	.2001
2.01	9.0	0.3	.4125	.1706	.0216	.0006	-.0141	-.0672	.2334
2.01	12.0	0.3	.6406	.1625	.0219	.0006	-.0110	-.1015	.2926
2.01	-3.0	0.3	-.1937	.2055	-.0475	-.0001	-.0068	-.0140	.2154
2.01	-6.0	0.3	-.3343	.2187	-.0705	.0001	-.0037	-.0076	.2525
2.01	0	0.3	-.0593	.1942	-.0257	-.0002	-.0100	-.0229	.1943

TABLE V.- FORCE AND MOMENT COEFFICIENTS FOR CONFIGURATION WITH REARWARD-LOCATED FLAT-WINDSHIELD CANOPY

M	α, deg	β, deg	C_N	C_c	C_m	C_l	C_n	C_Y	C_D
1.41	0.4	0	-.0077	.1928	-.0137	.0000	.0010	.0115	.1927
1.41	0.4	-4	-.0064	.2023	-.0144	.0021	.0760	.2448	.2189
1.41	0.4	-8	-.0307	.2027	-.0142	.0064	.1450	.5459	.2765
1.41	0.4	0	-.0077	.1953	-.0136	.0000	.0010	.0104	.1952
1.41	6.5	0	.2425	.1842	.0243	.0001	-.0075	-.0010	.2105
1.41	6.5	-4	.2349	.1851	.0250	-.0036	.0627	.3232	.2326
1.41	6.5	-8	.2234	.1846	.0272	-.0042	.1160	.7126	.3058
2.01	0.4	0	-.0374	.2037	-.0366	.0001	.0001	-.0063	.2034
2.01	0.4	-4	-.0343	.2065	-.0391	.0024	.0646	.2900	.2260
2.01	0.4	-8	-.0763	.2115	-.0412	.0074	.1170	.6691	.3021
2.01	0.4	0	-.0374	.2027	-.0368	-.0002	-.0003	-.0088	.2024
2.01	6.5	0	.2716	.1857	-.0103	-.0004	-.0025	-.0127	.2153
2.01	6.5	-4	.2700	.1870	-.0099	-.0018	.0456	.3755	.2420
2.01	6.5	-8	.2248	.1891	-.0049	-.0007	.0817	.8279	.3265
2.01	6.5	0	.2778	.1858	-.0103	-.0004	-.0023	-.0127	.2161

TABLE VI.- FORCE AND MOMENT COEFFICIENTS FOR CONFIGURATION WITH REARWARD-LOCATED VEE-WINDSHIELD CANOPY

M	α, deg	β, deg	C_N	C_c	C_m	C_l	C_n	C_Y	C_D
1.41	0.4	0	-.0179	.2179	-.0124	.0002	.0010	.0083	.2178
1.41	0.4	-4	-.0167	.2210	-.0134	.0020	.0734	.2503	.2378
1.41	0.4	-8	-.0461	.2141	-.0114	.0068	.1400	.5736	.2916
1.41	0.4	0	-.0154	.2179	-.0121	.0002	.0011	.0083	.2178
1.41	6.5	0	.2429	.1985	.0236	.0002	-.0028	.0094	.2247
1.41	6.5	-4	.2442	.2016	.0238	.0033	.0572	.3362	.2509
1.41	6.5	-8	.2097	.2013	.0284	.0028	.1053	.7659	.3282
1.41	6.5	0	.2455	.1960	.0236	.0004	-.0049	.0000	.2225
2.01	0.4	0	-.0469	.2163	-.0350	.0001	.0001	-.0050	.2160
2.01	0.4	-4	-.0438	.2145	-.0364	.0012	.0629	.2929	.2341
2.01	0.4	-8	-.0782	.2188	-.0373	.0034	.1164	.6725	.3098
2.01	0.4	0	-.0406	.2182	-.0350	.0001	-.0001	-.0026	.2179
2.01	6.5	0	.2724	.1948	-.0093	-.0001	-.0011	.0000	.2244
2.01	6.5	-4	.2693	.1964	-.0098	-.0009	.0442	.3785	.2515
2.01	6.5	-8	.2223	.1941	-.0028	-.0001	.8451	.8451	.3336
2.01	6.5	0	.2755	.1919	-.0093	-.0001	-.0017	-.0039	.2219

TABLE VII.- FORCE AND MOMENT COEFFICIENTS FOR CONFIGURATION WITH REARWARD-LOCATED ROUND-WINDSHIELD CANOPY

M	α, deg	β, deg	C_N	C_c	C_m	C_l	C_n	C_Y	C_D
1.41	0.4	0	-.0179	.1983	-.0109	-.0001	-.0014	.0062	.1982
1.41	0.4	-4	-.0154	.2048	-.0116	.0017	.0732	.2433	.2212
1.41	0.4	-8	-.0359	.2043	-.0114	.0055	.1397	.5503	.2787
1.41	0.4	0	-.0153	.1973	-.0110	-.0001	-.0015	.0062	.1972
1.41	6.5	0	.2380	.1870	.0271	-.0001	-.0050	.0083	.2127
1.41	6.5	-4	.2418	.1896	.0271	-.0041	.0603	.3217	.2377
1.41	6.5	-8	.2277	.1901	.0288	-.0057	.1111	.6946	.3093
1.41	0	0.3	-.0332	.1975	-.0102	-.0003	-.0105	-.0177	.1976
1.41	3.0	0.3	.0870	.1917	.0104	.0000	-.0015	-.0218	.1961
1.41	6.0	0.3	.2149	.1863	.0268	.0003	-.0116	-.0280	.2079
1.41	9.0	0.3	.3633	.1810	.0385	.0006	-.0111	-.0384	.2358
1.41	12.0	0.3	.5577	.1700	.0418	.0009	-.0099		
1.41	-3.0	0.3	-.1509	.1993	-.0319	-.0006	-.0092	-.0156	.2070
1.41	-6.0	0.3	-.2635	.2007	-.0537	-.0006	-.0071	-.0145	.2272
1.41	0	0.3	-.0332	.1975	-.0101	-.0003	-.0105	-.0177	.1976
2.01	0.4	0	-.0469	.2090	-.0334	-.0004	-.0040	-.0039	.2087
2.01	0.4	-4	-.0469	.2103	-.0357	.0021	.0635	.2898	.2297
2.01	0.4	-8	-.0766	.2148	-.0374	.0064	.1142	.6669	.3051
2.01	0.4	0	-.0406	.2129	-.0334	-.0005	-.0041	-.0063	.2126
2.01	6.5	0	.2724	.1898	-.0069	-.0002	-.0132	-.0203	.2194
2.01	6.5	-4	.2662	.1896	-.0066	-.0024	.0455	.3683	.2437
2.01	6.5	-8	.2301	.1928	-.0021	-.0019	.0802	.8077	.3279
2.01	0	0.3	-.0596	.2076	-.0341	-.0005	-.0068	-.0204	.2077
2.01	3.0	0.3	.0847	.1996	-.0183	-.0003	-.0079	-.0293	.2039
2.01	6.0	0.3	.2415	.1884	-.0064	-.0002	-.0083	-.0420	.2128
2.01	9.0	0.3	.4078	.1845	.0015	-.0001	-.0074	-.0585	.2463
2.01	12.0	0.3	.6055	.1830	.0072	-.0001	-.0046	-.0815	.3053
2.01	-3.0	0.3	-.1977	.2144	-.0523	-.0004	-.0051	-.0141	.2245
2.01	-6.0	0.3	-.3483	.2258	-.0719	-.0003	-.0031	-.0089	.2610
2.01	0	0.3	-.0565	.2047	-.0340	-.0004	-.0068	-.0204	.2048

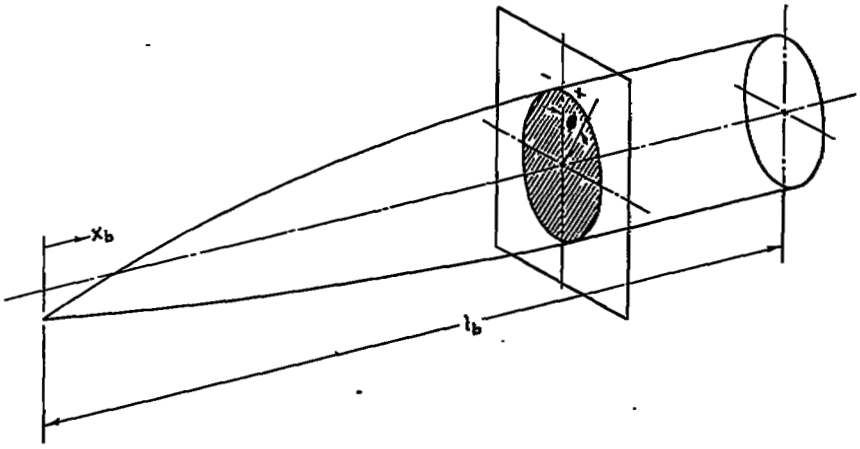
TABLE VIII.- FORCE AND MOMENT COEFFICIENTS FOR CONFIGURATION WITH FORWARD-LOCATED SMALL FLAT-WINDSHIELD CANOPY

M	α, deg	β, deg	C_N	C_c	C_m	C_l	C_n	C_Y	C_D
1.41	0.4	0	-.0077	.1329	-.0168	-.0001	.0005	.0115	.1328
1.41	0.4	-4	-.0051	.1338	-.0173	-.0009	.0588	.2217	.1489
1.41	0.4	-8	-.0321	.1305	-.0169	-.0011	.1151	.4772	.1954
1.41	0.4	0	-.0077	.1321	-.0170	-.0001	.0004	.0104	.1320
1.41	6.5	0	.2202	.1347	.0299	.0002	-.0051	.0021	.1588
1.41	6.5	-4	.2151	.1307	.0312	-.0058	.0557	.2426	.1708
1.41	6.5	-8	.2074	.1226	.0354	-.0107	.1065	.5460	.2199
1.41	6.5	0	.2228	.1332	.0299	.0002	-.0049	.0011	.1576
2.01	0.4	0	-.0312	.1477	-.0285	-.0001	-.0024	-.0089	.1475
2.01	0.4	-4	-.0344	.1462	-.0295	-.0007	.0549	.2506	.1631
2.01	0.4	-8	-.0579	.1475	-.0315	-.0012	.1087	.5653	.2244
2.01	0.4	0	-.0312	.1487	-.0285	-.0001	-.0023	-.0102	.1485
2.01	6.5	0	.2441	.1394	.0109	.0000	-.0047	-.0127	.1661
2.01	6.5	-4	.2488	.1446	.0105	-.0052	.0498	.2870	.1914
2.01	6.5	-8	.2410	.1453	.0094	-.0093	.0934	.6619	.2621
2.01	6.5	0	.2472	.1420	.0109	.0001	-.0047	-.0140	.1691

TABLE IX.- FORCE AND MOMENT COEFFICIENTS FOR CONFIGURATION WITH REARWARD-LOCATED SMALL FLAT-WINDSHIELD CANOPY

M	α, deg	β, deg	C_N	C_c	C_m	C_l	C_n	C_Y	C_D
1.41	0.4	0	-.0025	.1342	-.0227	-.0001	.0014	.0041	.1342
1.41	0.4	-4	-.0039	.1361	-.0229	-.0003	.0577	.2220	.1512
1.41	0.4	-8	-.0231	.1394	-.0213	-.0001	.1119	.4914	.2063
1.41	0.4	0	-.0025	.1326	-.0226	.0000	.0013	.0041	.1326
1.41	6.5	0	.2227	.1259	.0204	-.0002	-.0023	.0073	.1503
1.41	6.5	-4	.2253	.1237	.0215	-.0055	.0522	.2482	.1654
1.41	6.5	-8	.2099	.1207	.0254	-.0096	.0998	.5622	.2206
1.41	6.5	0	.2252	.1251	.0204	-.0001	-.0023	.0073	.1498
2.01	0.4	0	-.0282	.1422	-.0342	-.0001	-.0004	-.0076	.1420
2.01	0.4	-4	-.0282	.1427	-.0351	-.0005	.0525	.2604	.1603
2.01	0.4	-8	-.0517	.1464	-.0371	.0001	.0964	.5804	.2254
2.01	0.4	0	-.0219	.1461	-.0342	-.0001	-.0005	-.0102	.1459
2.01	6.5	0	.2531	.1291	.0014	-.0001	-.0022	-.0076	.1569
2.01	6.5	-4	.2594	.1296	.0006	.0048	.0420	.2966	.1784
2.01	6.5	-8	.2359	.1304	.0021	-.0075	.0729	.6914	.2510
2.01	6.5	0	.2562	.1291	.0012	.0000	-.0023	-.0101	.1573

TABLE X.- PRESSURE COEFFICIENTS FOR FUSELAGE ALONE



(a) M=1.41

β, deg \ $\frac{x_b}{l_b}$	.160	.200	.240	.320	.360	.400	.440	.480	.520	.560	.600	.640	.680	.720	.760	.800	.840	.880	.980	.960
α=0.4°; β=0°																				
0	.223	.171	.144	.069	.058	.028	.014	.003	-.022	-.036	-.064	-.082	-.080	-.080	-.070	-.057	-.048	-.039	-.030	-.025
30	.212	.164	.133	.076	.058	.025	.008	-.003	-.030	-.052	-.059	-.070	-.084	-.071	-.059	-.052	-.049	-.042	-.034	-.024
α=0.4°; β=-4°																				
0	.209	.155	.128	.076	.042	.011	.000	-.013	-.036	-.053	-.079	-.100	-.099	-.102	-.091	-.079	-.069	-.060	-.049	-.049
30	.223	.187	.162	.107	.086	.051	.030	.015	-.021	-.039	-.047	-.063	-.083	-.071	-.065	-.063	-.061	-.061	-.048	-.036
-30	.167	.119	.082	.024	.008	-.024	-.034	-.044	-.070	-.088	-.091	-.097	-.106	-.091	-.076	-.065	-.060	-.053	-.045	-.035
α=0.4°; β=-8°																				
0	.177	.117	.099	.062	.004	-.030	-.043	-.056	-.081	-.097	-.122	-.148	-.156	-.160	-.149	-.138	-.126	-.115	-.105	-.101
30	.215	.195	.172	.123	.103	.068	.040	.022	-.006	-.036	-.050	-.070	-.092	-.089	-.088	-.093	-.097	-.099	-.088	-.075
-30	.107	.058	.014	-.036	-.052	-.081	-.094	-.098	-.122	-.137	-.139	-.139	-.144	-.122	-.100	-.087	-.077	-.069	-.058	-.053
α=6.5°; β=0°																				
0	.129	.089	.071	.026	.000	-.019	-.028	-.035	-.054	-.068	-.081	-.093	-.085	-.080	-.060	-.046	-.037	-.030	-.019	-.014
30	.189	.068	.076	.086	.011	-.011	-.025	-.038	-.058	-.072	-.077	-.090	-.096	-.081	-.069	-.059	-.051	-.044	-.030	-.022
α=6.5°; β=-4°																				
0	.116	.072	.056	.012	-.019	-.036	-.046	-.052	-.071	-.082	-.099	-.111	-.104	-.098	-.076	-.063	-.052	-.043	-.034	-.029
30	.128	.092	.079	.034	.018	-.011	-.029	-.045	-.066	-.085	-.096	-.113	-.127	-.120	-.112	-.108	-.101	-.091	-.069	-.063
-30	.101	.062	.046	-.001	-.011	-.031	-.042	-.049	-.068	-.076	-.080	-.086	-.088	-.071	-.057	-.045	-.038	-.032	-.030	-.023
α=6.5°; β=-8°																				
0	.072	.026	.017	-.031	-.041	-.047	-.058	-.103	-.123	-.133	-.151	-.167	-.160	-.152	-.125	-.105	-.087	-.072	-.061	-.054
30	.112	.088	.077	.031	.016	-.018	-.038	-.061	-.082	-.109	-.127	-.144	-.168	-.170	-.170	-.175	-.175	-.164	-.142	-.128
-30	.042	.013	-.006	-.045	-.051	-.070	-.076	-.078	-.093	-.096	-.099	-.099	-.099	-.082	-.069	-.062	-.059	-.060	-.054	-.052
α=-6.0°; β=0.3°																				
0	.320	.269	.235	.170	.137	.097	.079	.066	.036	.014	-.018	-.045	-.051	-.059	-.054	-.050	-.041	-.034	-.022	-.015
30	.301	.244	.195	.125	.103	.061	.037	.025	-.033	-.039	-.049	-.063	-.082	-.077	-.069	-.061	-.056	-.056	-.048	-.042
α=-3.0°; β=0.3°																				
0	.266	.212	.186	.127	.096	.057	.042	.032	.005	-.014	-.045	-.068	-.072	-.076	-.068	-.058	-.047	-.038	-.026	-.020
30	.251	.198	.158	.096	.076	.039	.020	.007	-.025	-.047	-.056	-.070	-.086	-.079	-.068	-.055	-.050	-.048	-.039	-.038
α=3.0°; β=0.3°																				
0	.178	.130	.108	.061	.031	.004	-.007	-.014	-.033	-.044	-.068	-.084	-.081	-.081	-.064	-.048	-.039	-.030	-.020	-.015
30	.172	.128	.101	.052	.036	.007	-.006	-.018	-.040	-.058	-.064	-.078	-.098	-.076	-.063	-.056	-.045	-.041	-.031	-.022

TABLE A.- PRESSURE COEFFICIENTS FOR FUSELAGE ALONE - Concluded

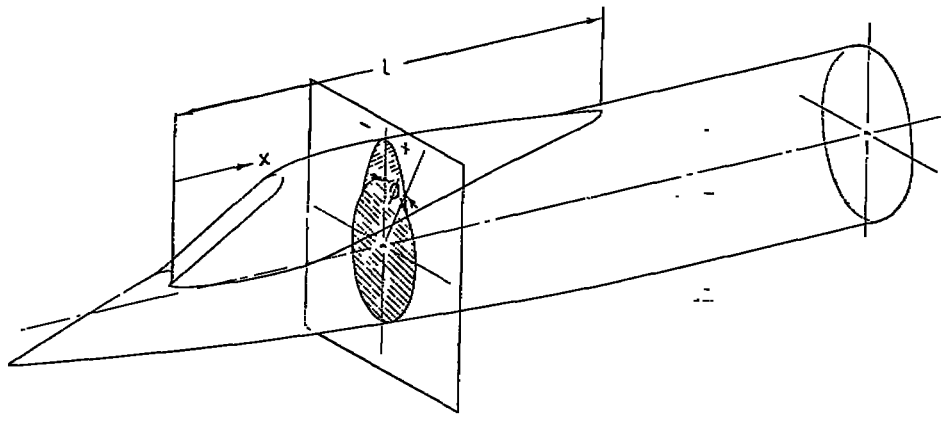
(a) M=1.41

x_b / z_b / β, deg	.160	.200	.240	.320	.360	.400	.440	.480	.520	.560	.600	.640	.680	.720	.760	.800	.840	.880	.920	.960
α=9.0° ; β=0.3°																				
0	.056	.059	.041	.000	-.023	-.042	-.045	-.046	-.062	-.068	-.085	-.095	-.087	-.090	-.086	-.083	-.085	-.025	-.019	-.017
30	.056	.062	.043	.002	-.008	-.025	-.045	-.054	-.072	-.085	-.090	-.103	-.110	-.092	-.079	-.066	-.055	-.049	-.038	-.032
α=12.0° ; β=0.3°																				
0	.058	.035	.021	-.016	-.036	-.052	-.053	-.051	-.065	-.071	-.085	-.094	-.084	-.075	-.055	-.042	-.034	-.026	-.017	-.014
30	.058	.037	.020	-.017	-.027	-.052	-.061	-.069	-.084	-.097	-.104	-.113	-.116	-.097	-.082	-.069	-.060	-.056	-.048	-.045

(b) M=2.01

α=0.4° ; β=0°																				
0	.206	.170	.159	.111	.085	.063	.046	.035	.014	.003	-.016	-.034	-.042	-.046	-.039	-.033	-.030	-.025	-.018	-.015
30	.202	.170	.145	.099	.081	.054	.039	.026	.007	-.010	-.017	-.025	-.039	-.039	-.035	-.030	-.027	-.025	-.021	-.019
α=0.4° ; β=-4°																				
0	.199	.158	.148	.098	.073	.046	.033	.020	.000	-.011	-.021	-.050	-.060	-.060	-.061	-.059	-.053	-.051	-.046	-.042
30	.213	.192	.167	.119	.112	.079	.061	.047	.026	.004	-.006	-.018	-.035	-.036	-.035	-.036	-.037	-.040	-.026	-.032
-30	.162	.126	.096	.051	.037	.011	.000	-.012	-.028	-.045	-.052	-.057	-.066	-.062	-.055	-.047	-.040	-.036	-.032	-.029
α=0.4° ; β=-8°																				
0	.188	.148	.130	.073	.051	.019	.003	-.008	-.028	-.043	-.065	-.083	-.098	-.105	-.110	-.113	-.116	-.121	-.118	-.113
30	.222	.208	.196	.153	.141	.103	.085	.060	.045	.022	.006	-.007	-.028	-.034	-.037	-.040	-.045	-.049	-.050	-.054
-30	.116	.075	.039	-.001	-.020	-.038	-.054	-.068	-.075	-.090	-.099	-.103	-.106	-.099	-.086	-.076	-.068	-.063	-.055	-.052
α=6.5° ; β=-4°																				
0	.120	.075	.060	.029	.009	-.012	-.022	-.028	-.042	-.053	-.068	-.076	-.079	-.076	-.065	-.058	-.050	-.043	-.036	-.033
30	.117	.100	.089	.051	.041	.013	.001	-.013	-.025	-.045	-.054	-.065	-.083	-.080	-.063	-.054	-.049	-.063	-.076	-.069
-30	.092	.046	.019	.017	.003	-.012	-.020	-.026	-.037	-.047	-.051	-.054	-.060	-.053	-.043	-.035	-.029	-.027	-.021	-.017
α=6.5° ; β=-8°																				
0	.052	.016	.026	-.008	-.025	-.052	-.061	-.070	-.082	-.096	-.112	-.124	-.133	-.132	-.115	-.098	-.082	-.073	-.069	-.063
30	.115	.103	.099	.058	.049	.019	.006	-.012	-.026	-.050	-.064	-.078	-.097	-.104	-.111	-.120	-.127	-.134	-.139	-.143
-30	.030	.025	.006	-.020	-.029	-.044	-.048	-.052	-.059	-.065	-.067	-.069	-.071	-.066	-.058	-.056	-.056	-.050	-.062	-.065
α=-6.0° ; β=0.3°																				
0	.327	.273	.259	.195	.169	.137	.114	.100	.071	.052	.035	.008	-.010	-.017	-.014	-.015	-.013	-.010	-.008	-.005
30	.299	.255	.215	.151	.134	.095	.077	.059	.024	.007	-.005	-.018	-.033	-.032	-.034	-.033	-.031	-.030	-.024	-.024
α=-3.0° ; β=0.3°																				
0	.270	.220	.210	.152	.126	.099	.082	.068	.045	.026	.004	-.014	-.024	-.033	-.027	-.026	-.023	-.022	-.015	-.010
30	.263	.213	.180	.125	.104	.076	.059	.045	.023	-.002	-.012	-.022	-.034	-.035	-.034	-.033	-.031	-.031	-.025	-.023
α=3.0° ; β=0.3°																				
0	.142	.120	.116	.072	.051	.022	.020	.009	-.009	-.020	-.035	-.050	-.055	-.055	-.048	-.045	-.035	-.030	-.022	-.017
30	.152	.126	.104	.066	.051	.029	.017	.004	-.011	-.023	-.034	-.043	-.055	-.053	-.048	-.039	-.035	-.033	-.026	-.021
α=6.0° ; β=0.3°																				
0	.120	.097	.079	.043	.027	.010	-.003	-.010	-.021	-.033	-.046	-.057	-.057	-.056	-.046	-.040	-.033	-.026	-.019	-.016
30	.114	.091	.074	.043	.030	.010	-.001	-.013	-.023	-.037	-.048	-.058	-.062	-.058	-.051	-.045	-.040	-.036	-.030	-.023
α=9.0° ; β=0.3°																				
0	.059	.057	.052	.021	.004	-.011	-.019	-.023	-.034	-.040	-.053	-.059	-.058	-.056	-.046	-.039	-.031	-.026	-.020	-.017
30	.053	.052	.049	.021	.011	-.009	-.017	-.026	-.036	-.049	-.054	-.063	-.070	-.066	-.057	-.050	-.046	-.041	-.035	-.028
α=12.0° ; β=0.3°																				
0	.062	.036	.031	.006	-.008	-.022	-.026	-.027	-.035	-.042	-.052	-.060	-.057	-.056	-.045	-.038	-.032	-.026	-.019	-.016
30	.059	.042	.032	.006	-.004	-.022	-.028	-.036	-.047	-.051	-.063	-.070	-.079	-.072	-.064	-.059	-.053	-.051	-.046	-.045

TABLE XI.- PRESSURE COEFFICIENTS FOR CONFIGURATION WITH FORWARD-LOCATED FLAT-WINDSHIELD CANOPY



(a) M=1.41

x/l / β, deg	.000	.001	.004	.006	.017	.046	.092	.164	.216	.238	.240	.260	.321	.356	.440	.600	.828	.988
α=0.4°; β=0°																		
P.I.		.457					.254	.149	.156			.104		-.039	-.092		-.025	.046
57½		.497			.454		.216	.173						-.039				
45		-.001											-.059		-.092			
30			.801		.565	.432	.313					.100		-.159	-.122			
15							.547	.257	.176			.027	-.121	-.172	-.183		-.025	
10								.505										
7									.343									
3								.556		.244		-.041	-.150	-.188	-.157	-.102	-.002	
0				.820			.635				.220		-.180			-.054		.046
α=0.4°, β=-4°																		
P.I.		.632					.361	.240	.246			.183		.023	-.039		-.104	.022
57½		.632			.570		.311	.272						.023				
45		-.017											.017		-.039			
30			.814		.643	.563	.422					.151		-.089	-.072			
15							.616	.419	.322			.138	-.059	-.126	-.155		-.104	
10								.568										
7									.440									
3								.571		.276		.020	-.148	-.205	-.204	-.168	-.032	
0				.818			.626				.231		-.200			-.156		.022
-3								.531		.212		-.087	-.152	-.216	-.192	-.148	-.023	
-7									.250									
-10								.431										
-15							.454	.151	.023			-.111	-.207	-.226	-.215		-.002	
-30			.782		.476	.257	.186					-.005		-.220	-.161			
-45		.008											-.132		-.135			
-57½		.305			.321		.107	.073						-.095				
-P.I.		.305					.155	.063	.074			.030		-.095	-.135		-.002	.017

TABLE XI - PRESSURE COEFFICIENTS FOR CONFIGURATION WITH FORWARD-LOCATED FLAT-WINDSHIELD CANOPY - Continued

(a) M=1.41

x/l / φ,deg	.000	.001	.004	.006	.017	.046	.092	.104	.215	.238	.240	.260	.311	.356	.410	.600	.828	.988
α=0.4°; β=-8°																		
P.L.		.738					.666	.348	.345			.270		.093	.024		-.251	-.020
57½		.738			.671		.615	.385						.093				
45		-.018											.099		.024			
30			.835		.726	.662	.522					.281		-.011	-.006			
15							.656	.532	.480			.236	-.003	-.074	-.112		-.251	
10								.609										
7									.503									
3								.575		.296		.071	-.143	-.242	-.310	-.343	-.088	
0				.827			.607				.234		-.225			-.354		-.020
-3								.522		.203		-.095	-.157	-.280	-.315	-.296	-.104	
-7									.198									
-10								.365										
-15							.352	-.323	-.393			-.245	-.313	-.321	-.253		-.237	
-30			.780		.518	-.143	.056					-.115		-.269	-.194			
-45		.023											-.194		-.167			
-57½		.057			.130		.002	-.238						-.142				
-P.L.		.057					.059	-.313	.003			-.035		-.147	-.167		-.237	-.021
α=6.5°; β=0°																		
P.L.		.466					.262	.158	.169			.108	.061	-.034	-.122		-.053	.007
57½		.466			.417		.399	.268						-.034				
45	.652								.270				-.060		-.222			
30			.683		.466	.368	.261					.084		-.158	-.149			
25							.432	.212	.242			.003	-.161	-.233	-.206		-.053	
10								.370										
7									.240									
3								.305		.134		-.127	-.227	-.236	-.188	-.092		
0				.694			.493				.107		-.243			-.088	-.052	.007
α=6.5°; β=-4°																		
P.L.		.570					.340	.233	.236			.177	.124	.022	-.074		-.230	.003
57½		.570			.512		.285	.259						.022				
45	.667								.251				.027		-.074			
30			.687		.534	.474	.358					.158		-.099	-.104			
25							.492	.326	.260			.092	-.137	-.179	-.201		-.120	
10								.427										
7									.321									
3								.420		.162		-.076	-.223	-.277	-.236	-.138		
0				.690			.488				.215		-.273			-.116	-.038	.003
-3								.383		.103		-.171	-.293	-.268	-.212	-.119		
-7									.242									
-10								.297										
-15							.343	.085	-.005			-.133	-.216	-.242	-.211		-.026	
-30			.668		.391	.225	.152					.006		-.214	-.172			
-45	.619								.090				-.102		-.159			
-57½		.313			.313		.122	.088						-.083				
-P.L.		.313					.276	.077	.088			.062	.000	-.083	-.159		-.026	-.011
α=6.5°; β=-8°																		
P.L.		.635					.420	.224	.321			.258	.196	.085	-.017		-.209	-.046
57½		.625			.592		.378	.254						.085				
45	.656								.336				.098		-.017			
30			.680		.579	.555	.441					.237		-.023	-.052			
25							.518	.320	.355			.169	-.080	-.160	-.159		-.209	
10								.460										
7									.369									
3								.427		.179		-.027	-.212	-.320	-.208	-.257		
0				.696			.468				.220		-.203			-.232	-.035	-.046
-3								.367		.091		-.180	-.369	-.439	-.314	-.212		
-7									.283									
-10								.233										
-15							.239	-.066	-.151			-.242	-.285	-.252	-.237		-.056	
-30			.665		.420	-.039	.038					-.077		-.258	-.192			
-45	.589								.031				-.153		-.191			
-57½		.225			.195		.025	.015						-.127				
-P.L.		.125					.088	.015	.086			-.014	-.049	-.127	-.191		-.056	-.071

TABLE XI - PRESSURE COEFFICIENTS FOR CONFIGURATION WITH FORWARD-LOCATED FLAT-WINDSHIELD CANOPY - Continued

(b) M=2.01

x/l / β, deg	.000	.001	.004	.006	.017	.046	.092	.164	.226	.236	.240	.260	.311	.356	.440	.600	.828	.968
α=0.4° ; β=0°																		
P.L.		.380					.221		.112			.115	.093	.039	.002		-.012	.045
57½		.380			.419		.211	.157						.039				
45	.772								.166				.022		.002			
30			.878		.624	.435	.331					.125		-.029	-.047			
15							.565	.340	.233			.116	-.007	-.051	-.075		-.032	
10								.514										
7									.435									
3								.603		.365		.118	-.056	-.081	-.065	-.065	.015	
0				.908			.657				.349		-.056			-.061	.015	.045
α=0.4° ; β=-4°																		
P.L.		.490					.319		.216			.155	.156	.097	.051		-.096	.021
57½		.490			.512		.306	.248						.097				
45	.725								.253				.087		.051			
30			.852		.680	.549	.440					.218		.022	.002			
15							.638	.433	.336			.200	.049	-.003	-.068		-.096	
10								.594										
7									.494									
3								.609		.382		.144	-.026	-.084	-.064	-.101	-.027	
0				.891			.652				.349		-.075			-.099	-.014	.021
-3								.591		.347		.095	-.094	-.114	-.090	-.096	-.010	
-7									.379									
-10								.490										
-15							.185	.255	.135			.023	-.073	-.109	-.115		.019	
-30			.874		.574	.173	.228					.038		-.066	-.096			
-45	.778								.081				-.031		-.061			
-57½		.237			.321		.118	.075						-.010				
-P.L.		.237					.129		.074			.051	.033	-.010	-.061		.019	.012
α=0.4° ; β=-8°																		
P.L.		.579					.420		.299			.263	.226	.158	.101		-.122	-.076
57½		.579			.580		.399	.341						.158				
45	.652								.347				.153		.101			
30			.784		.716	.647	.537					.306		.075	.051			
15							.696	.519	.430			.285	-.098	.040	-.017		-.122	
10								.629										
7									.539									
3								.612		.393		.167	.001	-.080	-.139	-.194	-.096	
0				.861			.658				.342		-.069			-.195	-.094	-.076
-3								.586		.341		.087	-.107	-.173	-.140	-.179	-.115	
-7									.390									
-10								.455										
-15							.446	-.035	.050			-.018	-.121	-.158	-.158		-.140	
-30			.869		.562	-.037	.152					-.051		-.139	-.137			
-45	.770								-.002				-.085		-.085			
-57½		.078			.159		.028	.000						-.053				
-P.L.		.078					.047		.014			-.003	-.016	-.053	-.085		-.040	-.055
α=6.5° ; β=0°																		
P.L.		.337					.214		.131			.108	.081	.022	-.027		-.049	-.022
57½		.337			.342		.256	.145						.022				
45	.614								.152				.014		-.027			
30			.687		.490	.341	.262					.102		-.050	-.064			
15							.421	.240	.157			.059	-.050	-.087	-.114		-.049	
10								.398										
7									.305									
3								.435		.232		.025	-.121	-.138	-.105	-.076	-.024	
0				.697			.487				.215		-.126			-.071	-.023	-.022

TABLE VI.- PRESSURE COEFFICIENTS FOR CONFIGURATION WITH FORWARD-LOCATED FLAT-WINDSHIELD CANOPY - Concluded

(b) M=2.01

x/l / φ, deg	.000	.001	.004	.006	.017	.036	.092	.164	.216	.238	.240	.260	.311	.356	.440	.600	.828	.988
$\alpha=6.5°;\ \beta=-4°$																		
P.L.		.420					.297		.196			.168	.138	.068	.011		-.164	-.060
57½		.420			.407		.262	.217						.068				
45	.562								.224				.069		.011			
30			.655		.528	.440	.350					.170		-.008	-.029			
15							.485	.322	.247			.137	-.011	-.054	-.096		-.164	
10								.439										
7									.357									
3								.438		.284		.046	-.096	-.145	-.153	-.131	-.073	
0				.681			.479				.211		-.137			-.108	-.105	-.060
-3								.424		.215		.004	-.155	-.167	-.130	-.101	-.083	
-7									.241									
-10								.339										
-15							.346	.155	.058			-.027	-.111	-.137	-.133		-.020	
-30			.686		.440	.151	.164					.022		-.099	-.106			
-45	.618								.073				-.039		-.068			
-57½		.221			.250		.102	.067						-.024				
-P.L.		.221					.134		.071			.046	.025	-.024	-.068		-.020	-.091
$\alpha=6.5°;\ \beta=-8°$																		
P.L.		.500					.386		.278			.243	.210	.135	.066		-.163	-.076
57½		.500			.464		.351	.305						.135				
45	.499								.314				.139		.066			
30			.583		.550	.522	.441					.254		.054	.026			
15							.536	.405	.338			.216	.034	-.018	-.059		-.163	
10								.464										
7									.394									
3								.430		.263		.077	-.062	-.133	-.190	-.202	-.113	
0				.662			.494				.214		-.125			-.195	-.109	-.076
-3								.419		.209		-.001	-.158	-.221	-.207	-.198	-.168	
-7									.210									
-10								.297										
-15							.300	-.097	-.052			-.082	-.163	-.186	-.160		-.060	
-30			.666		.422	-.064	.083					-.054		-.138	-.134			
-45	.570								.004				-.083		-.100			
-57½		.071			.147		.027	.006						-.063				
-P.L.		.071					.057		.017			-.004	-.022	-.063	-.100		-.060	-.083

TABLE XII.- PRESSURE COEFFICIENTS FOR CONFIGURATION WITH FORWARD-LOCATED VEE-WINDSHIELD CANOPY

(a) M=1.41

x/l / ϕ, deg	.008	.044	.076	.124	.140	.164	.212	.244	.260	.295	.311	.324	.345	.356	.440	.600	.828	.988
α=04°; β=0°																		
P.L.	.463	.401	.380	.390	.376	.367	.217		.181		.061			.038	-.073	-.012	-.043	.069
57½						.367								.038				
51						.408	.228											
48							.250											
45				.390					.173		-.071				-.073			
41									.258									
34											-.231							
30			.380				.368				.124	-.282		-.266	-.227	-.012		
15		.404		.444		.425			.426		.318		-.195	-.346	-.295	-.064	-.043	
9											.299							
3	.463	.456	.450			.493			.471	.186	.114			-.064	-.186	-.165	-.022	.069
1							.513											
0																-.155	-.020	
α=0.4°; β=-4°																		
P.L.	.548	.490	.487	.490	.469	.453	.303		.258		.133			.105	-.014	.003	-.149	.043
57½						.453								.105				
51						.501	.326											
48							.349											
45				.490				.289	.282		.006				-.014			
41									.356									
34											-.130							
30			.487				.446				.167	-.226		-.150	-.161	.003		
15		.490		.527		.519			.491		.374		-.174	-.329	-.206	-.050	-.149	
9											.346							
3	.548	.526	.527			.575			.488	.085	.028			-.093	-.200	-.210	-.060	.043
1							.559											
0																-.240	-.050	
-1							.353											
-3	.345	.351	.344			.383			.383	.205	.121			-.076	-.199	-.245	-.043	.033
-9											.243							
-15		.307		.338		.324			.345		.256		-.226	-.366	-.335	-.084	-.001	
-30			.271				.282				.070	-.316		-.367	-.288	-.034		
-34											-.313							
-41									.158									
-45				.264				.081	.066		-.150				-.130			
-48							.143											
-51						.276	.123											
-57½						.254								-.026				
-P.L.	.345	.307	.271	.264	.252	.254	.126		.095		-.009			-.026	-.130	-.034	-.001	.033

TABLE XII.- PRESSURE COEFFICIENTS FOR CONFIGURATION WITH FORWARD-LOCATED VEE-WINDSHIELD CANOPY - Continued

(a) M=1.41

x/l / ϕ, deg	.008	.044	.076	.124	.110	.164	.212	.244	.260	.295	.311	.324	.345	.356	.440	.600	.828	.988
α=0.4°; β=-8°																		
P.L.	.606	.582	.588	.562	.566	.538	.391		.243		.209			.178	.050	.012	-.205	-.612
57½						.538								.178				
51						.583	.425											
48							.446											
45				.582				.407	.390		.088				.050			
42									.463									
34											-.019							
30			.588				.528				.210	-.123		-.050	-.090	.012		
15		.582		.617		.596			.560		.416		-.152	-.310	-.195	-.040	-.205	
9											.377							
3	.606	.579	.567			.612			.451	-.083	-.124			-.172	-.231	-.271	-.113	-.012
1							.554											
0																-.316	-.106	
-1							.015											
-3	.177	.107	.006			-.001			.129	.093	.043			-.135	-.236	-.348	-.134	
-9											.224							
-15		.197		.230		.210			.257		.164		-.252	-.380	-.363	-.129	-.043	
-30			.158				.195				.006	-.356		-.432	-.348	-.052		
-34											-.359							
-42									.065									
-45				.146				-.020	-.036		-.227				-.187			
-48							.036											
-51						.155	.015											
-57½						.130								-.088				
-P.L.	.177	.197	.158	.146	.135	.130	.033		.013		-.075			-.088	-.187	-.052	-.043	
α=6.5°; β=0°																		
P.L.	.341	.316	.315	.333	.328	.329	.212		.176		.068			.040	-.069	-.031	-.070	
57½						.329								.040				
51						.364	.229											
48							.243											
45				.333				.202	.191		-.044				-.069			
42									.239									
34											-.153							
30			.316				.316				.062	-.255		-.195	-.196	-.081		
15		.316		.362					.345		.273		-.217	-.368	-.274	-.116	-.070	
9											.213							
3	.341	.348	.339	.362		.375			.347	.074	.007			-.130	-.247	-.113	-.044	
1							.385											
0																-.111	-.042	

TABLE XCI.- PRESSURE COEFFICIENTS FOR CONFIGURATION WITH FORWARD-LOCATED TEE-WINGCHILD CANOPY - Continued

(a) M=1.41

x/l / φ, deg	.006	.044	.076	.124	.160	.184	.212	.244	.260	.295	.311	.324	.345	.356	.440	.600	.828	.968
$\alpha=6.5°;\beta=-4°$																		
F.I.	.416	.399	.406	.402	.418	.405	.298		.244		.128			.099	-.019	-.113	-.167	
57½						.405								.099				
51						.441	.315											
48							.330											
45				.412				.295	.274		.031				-.019			
41									.330									
34											-.062							
30			.406				.368				.105	-.162		-.107	-.142	-.113		
15		.399		.443					.401		.313		-.202	-.354	-.266	-.122	-.167	
9											.261							
3	.416	.421	.405	.428		.450			.354	-.046	-.087			-.171	-.264	-.242	-.085	
1							.421											
0																-.178	-.094	
-2							.366											
-3	.223	.246	.234	.259		.277			.227	.077	.019			-.147	-.262	-.141	-.095	
-9											.174							
-15		.221		.269					.278		.210		-.250	-.389	-.355	-.089	-.043	
-30			.211				.240				.017	-.322		-.294	-.252	-.064		
-34											-.253							
-41									.250									
-45				.238				.111	.101		-.113				-.119			
-48							.358											
-51						.283	.243											
-57½						.249								-.026				
-F.I.	.223	.221	.211	.238	.240	.249	.246		.211		.006			-.016	-.219	-.064	-.043	
$\alpha=6.5°;\beta=-8°$																		
F.I.	.463	.487	.455	.495	.455	.491	.284		.321		.194			.162	.034	-.119	-.265	
57½						.491								.162				
51						.519	.404											
48							.416											
45				.495				.390	.362		.113				.024			
41									.416									
34											.032							
30			.455				.486				.154	-.065		-.014	-.083	-.119		
15		.467		.525					.467		.351		-.286	-.342	-.267	-.135	-.285	
9											.291							
3	.463	.463	.438	.463		.479			.325	-.154	-.218			-.283	-.263	-.366	-.137	
1							.410											
0																-.241	-.157	
-2							-.036											
-3	.063	-.049	-.116	-.065		-.092			.047	-.002	-.037			-.200	-.294	-.254	-.247	
-9											.158							
-15		.118		.180					.209		.158		-.265	-.406	-.392	-.092	-.090	
-30			.105				.166				-.023	-.349		-.386	-.296	-.091		
-34											-.338							
-41									.067									
-45				.132				.026	.014		-.177				-.166			
-48							.071											
-51						.182	.060											
-57½						.164								-.873				
-F.I.	.063	.118	.105	.132	.139	.164	.073		.050		-.052			-.073	-.166	-.091	-.090	

TABLE VII.- PRESSURE COEFFICIENTS FOR CONFIGURATION WITH FORWARD-LOCATED VEE-WINDSHIELD CANOPY - Continued

(b) M=2.01

x/l / ϕ, deg	.008	.044	.076	.124	.110	.164	.212	.244	.260	.295	.311	.324	.345	.356	.440	.600	.828	.988
α=0.4°; β=0°																		
P.L.	.398	.379	.344		.312	.297	.191		.163		.077			.065	.018	-.028	-.049	.063
57½						.297								.065				
51						.335	.201											
48							.227											
45								.325	.167		-.003				.018			
41									.253									
34											-.056							
30			.344				.354				.217	-.057		-.115	-.105	-.028		
15		.379		.399		.374			.418		.395		.050	-.072	-.162	-.020	-.049	
9											.390							
3	.398	.421	.439	.455		.469			.466	.226	.163			.048	-.015	-.115	.001	.063
1							.492											
0																-.113	.006	
α=0.4°; β=-4°																		
P.L.	.507	.474	.445		.413	.397	.281		.243		.149			.133	.072	-.021	-.079	.034
57½						.397								.133				
51						.439	.300											
48							.327											
45								.424	.258		.068				.072			
41									.345									
34											.004							
30			.445				.440				.277	-.023		-.047	-.066	-.021		
15		.474		.492		.463			.490		.460		.061	-.050	-.145	-.005	-.079	
9											.447							
3	.507	.503	.503	.524		.540			.494	.152	.102			.003	-.042	-.096	-.078	.034
1							.544											
0																-.108	-.047	
-1							.325											
-3	.271	.328	.341	.361		.375			.397	.235	.170			.034	-.024	-.130	-.036	-.022
-9											.310							
-15		.279		.283		.286			.332		.322		.009	-.107	-.158	-.100	.009	
-30			.246				.244				.159	-.095		-.174	-.173	-.025		
-34											-.098							
-41									.168									
-45								.217	.068		-.075				-.039			
-48							.137											
-51						.225	.108											
-57½						.194								.001				
-P.L.	.271	.279	.246		.207	.192	.102		.085		.010			.001	-.039	-.025	.009	-.022

TABLE XII.- PRESSURE COEFFICIENTS FOR CONFIGURATION WITH FORWARD-LOCATED VEE-WINDSHIELD CANOPY - Continued

(b) M=2.01

x/l / φ,deg	.008	.044	.076	.124	.140	.164	.212	.244	.260	.295	.311	.324	.345	.356	.440	.600	.828	.988
α=0.4°; β=-8°																		
P.L.	.590	.577	.554		.512	.498	.377		.333		.229			.207	.136	.023	-.089	-.050
57½						.498								.207				
51						.553	.407											
48							.433											
45								.527	.361		.118				.136			
41									.446									
34											.089							
30			.554				.531				.342	.024		.036	.023	.023		
15		.577		.581		.549			.567		.533		.119	-.023	-.127	-.005	-.089	
9											.507							
3	.590	.566	.552	.581		.599			.513	.051	-.006			-.079	-.108	-.116	-.142	-.050
1							.572											
0																-.134	-.121	
-1							.077											
-3	.159	.210	.140	.256		.220			.168	.158	.114			-.001	-.062	-.139	-.123	-.049
-9											.248							
-15		.192		.220		.204			.242		.246		-.027	-.132	-.146	-.185	-.046	
-30			.168				.182				.105	-.117		-.202	-.211	-.054		
-34											-.132							
-42									.095									
-45								.121	-.018		-.132				-.081			
-48							.051											
-51						.126	.022											
-57½						.099								-.053				
-P.L.	.159	.192	.168		.108	.099	.026		.016		-.016			-.053	-.084	-.054	-.046	-.049
α=6.5°; β=0																		
P.L.	.277	.281	.267		.265	.270	.194		.165		.079			.055	-.007	-.081	-.082	.015
57½						.270								.055				
51						.301	.202											
48							.219											
45								.268	.169		.007				-.007			
41									.224									
34											-.050							
30			.267				.291				.157	-.082		-.099	-.086	-.081		
15		.281		.309		.290			.319		.296		.004	-.109	-.135	-.051	-.082	
9											.280							
3	.277	.315	.219	.334		.343			.333	.110	.057			-.024	-.071	-.126	-.033	.015
1							.354											
0																-.129	-.027	

TABLE XII.- PRESSURE COEFFICIENTS FOR CONFIGURATION WITH FORWARD-LOCATED VER-WINDSHIELD CANOPY - Concluded

(b) M=2.01

x/l / φ, deg	.008	.044	.076	.124	.160	.164	.212	.244	.260	.295	.311	.324	.345	.356	.440	.600	.828	.988
α=6.5°; β=-4°																		
P.L.	.367	.368	.357		.340	.353	.270		.234		.144			.116	.043	-.044	-.134	-.007
57½						.353								.116				
51						.391	.268											
48							.305											
45								.352	.248		.072				.043			
42									.305									
24											.021							
30			.357				.365				.207	-.040		-.035	-.039	-.044		
15		.368		.390		.365			.380		.354		.033	-.087	-.175	-.077	-.134	
9											.338							
3	.367	.360	.376	.390		.402			.357	.032	-.006			-.104	-.100	-.115	-.078	-.007
1							.399											
0																-.128	-.076	
-1							.208											
-3	.174	.222	.234	.254		.256			.264	.124	.076			-.029	-.077	-.114	-.063	-.081
-9											.226							
-15		.193		.223		.216			.249		.237		-.026	-.128	-.156	-.060	-.022	
-30			.183				.218				.107	-.112		-.152	-.130	-.089		
-34											-.103							
-42									.150									
-45								.167	.024		-.044				-.044			
-48							.112											
-51						.219	.126											
-57½						.192								.008				
-P.L.	.174	.193	.180		.167	.192	.129		.107		.031			.008	-.044	-.089	-.022	-.081
α=6.5°; β=-8°																		
P.L.	.438	.465	.460		.428	.435	.355		.313		.215			.180	.100	.003	-.154	-.091
57½						.435								.180				
51						.477	.382											
48							.398											
45								.437	.345		.145				.100			
42									.396									
24											.105							
30			.460				.450				.270	.031		.037	.019	.003		
15		.465		.477		.446			.452		.419		.069	-.061	-.132	-.083	-.154	
9											.391							
3	.438	.446	.421	.439		.452			.380	-.055	-.073			-.143	-.174	-.163	-.138	-.091
1							.416											
0																-.154	-.173	
-1							-.019											
-3	.057	.023	-.042	.060		.007			.046	.032	.005			-.039	-.152	-.157	-.214	-.104
-9											.179							
-15		.101		.140		.127			.169		.170		-.062	-.155	-.207	-.112	-.064	
-30			.089				.136				.055	-.138		-.202	-.181	-.055		
-34											-.147							
-42									.072									
-45								.093	.016		-.202				-.087			
-48							.059											
-51						.125	.045											
-57½						.107								-.047				
-P.L.	.057	.101	.089		.093	.107	.060		.044		-.026			-.047	-.087	-.085	-.064	-.104

TABLE XIII.- PRESSURE COEFFICIENTS FOR CONFIGURATION WITH FORWARD-LOCATED ROUND-WINDSHIELD CANOPY

(a) M=1.41

x/l, ϕ, deg	.002	.036	.068	.124	.160	.212	.260	.311	.356	.410	.600	.828	.968
α=0.4°; β=-4°													
P.L.	.728	.512	.427	.366	.331	.275	.131	.059	.030	-.050	-.023	-.166	.025
57½					.331		.151	.026	.030				
45			.427		.332	.295	.147	-.020	-.061	-.050			
30		.512	.480	.454	.378	.354	.186	-.028	-.119	-.066	-.023		
15		.614	.576	.546	.497	.426	.228	-.056	-.148	-.167	-.053	-.166	
3				.611		.458	.220	-.106	-.193	-.211	-.182	-.061	.025
0	.728		.602		.577		.189		-.217		-.180	-.067	.026
-3				.569		.369	.126	-.154	-.254	-.222	-.197	-.050	.003
-15		.424	.347	.310	.257	.180	.026	-.200	-.253	-.210	-.061	-.031	
-30		.243	.227	.220	.148	.126	.004	-.267	-.244	-.187	-.030		
-45			.198		.120	.103	-.017	-.152	-.199	-.152			
-57½					.121		-.008	-.106	-.095				
-P.L.	.683	.243	.198	.143	.131	.089	.015	-.071	-.095	-.152	-.030	-.031	.003
α=0.4°; β=-8°													
P.L.	.721	.629	.540	.471	.432	.374	.178	.130	.101	.007	.001	-.229	-.038
57½					.432		.231	.099	.101				
45			.540		.434	.391	.226	.064	.018	.007			
30		.629	.596	.553	.483	.449	.269	.047	-.018	-.001	.001		
15		.670	.648	.619	.583	.513	.302	.007	-.102	-.124	-.057	-.229	
3				.602		.451	.222	-.113	-.205	-.273	-.311	-.119	-.038
0	.721		.539		.527		.148		-.265		-.335	-.114	-.017
-3				.479		.280	.048	-.220	-.312	-.226	-.341	-.159	-.037
-15		.297	.192	.146	.107	.033	-.301	-.290	-.320	-.287	-.104	-.047	
-30		.100	.073	.063	.021	.003	-.089	-.237	-.303	-.250	-.042		
-45			.069		.017	.008	-.094	-.216	-.257	-.190			
-57½					.037		-.077	-.159	-.146				
-P.L.	.627	.100	.069	.045	.037	.010	-.049	-.124	-.146	-.190	-.042	-.047	-.037
α=6.5°; β=-4°													
P.L.	.603	.442	.389	.359	.321	.273	.085	.059	.024	-.088	-.099	-.176	-.005
57½					.321		.004	≤.030	.024				
45			.389		.310	.283	.144	-.004	-.042	-.088			
30		.442	.426	.397	.330	.314	.158	-.039	-.132	-.096	-.099		
15		.499	.463	.439	.401	.346	.151	-.108	-.203	-.179	-.103	-.176	
3				.480		.375	.205	-.185	-.265	-.264	-.181	-.089	-.005
0	.603		.457		.435		.071		-.279		-.116	-.093	-.005
-3				.424		.262	.016	-.219	-.296	-.247	-.139	-.129	-.075
-15		.327	.273	.238	.200	.134	-.007	-.225	-.277	-.228	-.054	-.058	
-30		.203	.196	.188	.133	.127	.004	-.166	-.242	-.186	-.071		
-45			.181		.128	.118	.000	-.132	-.169	-.173			
-57½					.146		.015	-.090	-.088				
P.L.	.551	.203	.181	.165	.136	.111	.026	-.062	-.088	-.173	-.071	-.058	-.075
α=6.5°; β=-8°													
P.L.	.579	.541	.491	.458	.410	.360	.208	.124	.063	-.037	-.074	-.210	-.047
57½					.410		.007	.098	.063				
45			.491		.396	.368	.216	.041	.023	-.037			
30		.541	.525	.480	.416	.396	.223	.225	-.074	-.044	-.074		
15		.502	.523	.495	.468	.416	.216	-.062	-.168	-.150	-.125	-.210	
3				.442		.362	.096	-.207	-.292	-.262	-.294	-.156	-.047
0	.579		.396		.376		.025		-.354		-.370	-.201	-.048
-3				.332		.184	-.064	-.289	-.333	-.354	-.239	-.294	-.084
-15		.202	.129	.096	.061	-.003	-.121	-.276	-.225	-.261	-.063	-.058	
-30		.067	.072	.074	.031	.026	-.076	-.222	-.267	-.218	-.055		
-45			.080		.043	.038	-.066	-.124	-.211	-.206			
-57½					.066		-.002	-.136	-.133				
-P.L.	.504	.067	.080	.074	.066	.042	.000	-.108	-.133	-.206	-.055	-.058	-.084

TABLE XIII.- PRESSURE COEFFICIENTS FOR CONFIGURATION WITH FORWARD-LOCATED ROUND-WINDSHIELD CANOPY - Continued

(a) M=1.41

x/l / ϕ, deg	.002	.036	.088	.124	.160	.212	.260	.311	.356	.440	.600	.828	.988
$\alpha=-6.0°;\beta=0.3°$													
P.L.	.830	.451	.329	.265	.217	.150	.104	-.036	-.043	-.073	.033	-.005	.079
57½					.217		.159	-.078	-.043				
45			.329		.217	.195	.041	-.119	-.182	-.073			
30		.451	.392	.363	.279	.248	.090	-.101	-.185	-.153	.038		
15		.644	.571	.519	.461	.363	.175	-.094	-.161	-.138	-.018	-.006	
3				.762		.581	.301	-.020	-.130	-.135	-.155	.009	.079
0	.830		.786		.735		.324		-.129		-.127	.017	.095
$\alpha=-3.0°;\beta=0.3°$													
P.L.	.774	.408	.312	.257	.217	.157	.163	-.029	-.044	-.096	.007	-.031	.058
57½					.217		.158	-.066	-.044				
45			.312		.215	.193	.045	-.107	-.164	-.096			
30		.408	.366	.343	.265	.241	.086	-.106	-.169	-.143	.007		
15		.582	.516	.471	.414	.328	.148	-.118	-.165	-.162	-.004	-.031	
3				.688		.513	.239	-.070	-.172	-.167	-.153	-.011	.058
0	.774		.706		.661		.257		-.162		-.135	-.003	.070
$\alpha=0°;\beta=0.3°$													
P.L.	.719	.375	.301	.253	.219	.165	.167	-.024	-.043	-.112	-.021	-.047	.044
57½					.219		.161	-.056	-.043				
45			.301		.214	.192	.052	-.097	-.147	-.112			
30		.375	.344	.325	.254	.234	.083	-.109	-.192	-.144	-.021		
15		.529	.463	.432	.381	.301	.125	-.134	-.205	-.181	-.021	-.047	
3				.619		.452	.163	-.110	-.204	-.190	-.138	-.024	.044
0	.719		.635		.592		.198		-.197		-.124	-.018	.057
$\alpha=3.0°;\beta=0.3°$													
P.L.	.666	.345	.289	.250	.222	.173	.152	-.021	-.044	-.126	-.053	-.064	.029
57½					.222		.145	-.049	-.044				
45			.289		.212	.192	.056	-.088	-.133	-.126			
30		.345	.326	.308	.240	.225	.077	-.112	-.194	-.147	-.053		
15		.477	.417	.392	.345	.272	.104	-.151	-.223	-.198	-.043	-.064	
3				.553		.393	.132	-.149	-.236	-.208	-.122	-.035	.029
0	.666		.569		.526		.144		-.230		-.110	-.031	.044
$\alpha=6.0°;\beta=03°$													
P.L.	.609	.319	.278	.246	.221	.177	.154	-.016	-.046	-.142	-.087	-.082	.013
57½					.221		.148	-.044	-.046				
45			.278		.208	.187	.057	-.082	-.121	-.142			
30		.319	.307	.290	.224	.213	.070	-.116	-.157	-.156	-.087		
15		.427	.370	.350	.308	.241	.079	-.169	-.243	-.213	-.062	-.082	
3				.487		.330	.082	-.187	-.262	-.223	-.108	-.049	.013
0	.609		.502		.454		.090		-.260		-.100	-.043	.035

TABLE XIII.- PRESSURE COEFFICIENTS FOR CONFIGURATION WITH FORWARD-LOCATED ROUND-WINDSHIELD CANOPY - Continued

(a) M=1.41

x/l / ϕ, deg	.002	.036	.088	.124	.160	.212	.260	.311	.356	.440	.600	.828	.988
α=9.0°; β=0.3°													
P.L.	.553	.297	.267	.243	.220	.181	.156	-.008	-.045	-.151	-.124	-.098	-.009
57½					.220		.151	-.036	-.045				
45			.267		.204	.183	.057	-.077	-.111	-.151			
30		.297	.291	.274	.212	.201	.062	-.118	-.197	-.165	-.124		
15		.383	.329	.315	.273	.213	.056	-.185	-.260	-.222	-.080	-.058	
3				.425		.275	.036	-.217	-.284	-.230	-.099	-.062	-.009
0	.553		.438		.392		.042		-.283		-.091	-.054	.009
α=12.0°; β=0.3°													
P.L.	.496	.276	.254	.237	.216	.179	.159	-.002	-.043	-.152	-.164	-.106	-.037
57½					.216		.154	-.025	-.043				
45			.254		.199	.178	.057	-.071	-.102	-.152			
30		.276	.276	.256	.198	.152	.057	-.117	-.156	-.170	-.164		
15		.345	.294	.280	.241	.189	.040	-.154	-.270	-.229	-.094	-.106	
3				.367		.229	.000	-.240	-.296	-.230	-.094	-.077	-.037
0	.496		.382		.334		.004		-.297		-.087	-.068	-.011

(b) M=2.01

ϕ, deg	.725	.466	.390	.350	.305	.237	.174	.100	.089	.033	.020		.020
57½					.305			.079	.089				
45			.390		.302	.283	.186	.066	.007	.033			
30		.466	.443	.418	.360	.330	.232	.085	-.007	.027	.020		
15		.603	.551	.528	.493	.434	.293	.063	-.021	-.039	.003		
3				.635		.555	.304	.038	-.061	-.090	-.103	-.057	.020
0	.725		.612		.598		.279		-.072		-.102	-.036	.014
-3				.541		.426	.136	-.036	-.125	-.118	-.192	-.142	-.060
-15		.347	.263	.216	.185	.129	.032	-.117	-.157	-.150	-.136		
-30		.243	.083	.079	.050	.039	-.016	-.107	-.153	-.158	-.054		
-45			.063		.032	.024	-.035	-.111	-.150	-.135			
-57½					.032			-.088	-.073				
-P.L.	.628	.143	.063	.056	.032	.004	-.023	-.064	-.073	-.105	-.054		-.060
α=0.4°; β=-8°													
P.L.	.709	.579	.502	.466	.419	.338	.261	.176	.158	.090	.061		-.073
57½					.419			.152	.158				
45			.502		.408	.383	.273	.139	.079	.090			
30		.579	.566	.528	.465	.439	.320	.155	.055	.104	.061		
15		.665	.636	.614	.578	.524	.377	.121	.023	.001	.028		
3				.633		.570	.322	.043	-.058	-.111	-.158	-.123	-.073
0	.709		.576		.572		.264		-.090		-.181	-.112	-.061
-3				.626		.555	.304	.037	-.063	-.090	-.102	-.058	.020
-15		.605	.552	.530	.491	.435	.295	.063	-.021	-.038	.005		
-30		.467	.450	.420	.364	.332	.234	.087	-.006	.029	.022		
-45			.391		.304	.284	.189	.067	.009	.033			
-57½					.309			.060	.091				
-P.L.	.724	.467	.391	.352	.309	.238	.176	.103	.091	.033	.022		.020

TABLE XIII.- PRESSURE COEFFICIENTS FOR CONFIGURATION WITH FORWARD-LOCATED ROUND-WINDSHIELD CANOPY - Continued

(b) M=2.01

x/l / β, deg	.002	.036	.088	.124	.160	.212	.260	.311	.356	.440	.600	.828	.968
α=6.5°; β=-4°													
P.L.	.557	.385	.340	.315	.298	.235	.177	.096	.072	.002	-.033	-.150	-.033
57½					.298			.076	.072				
45			.340		.281	.261	.173	.060	.011	.002			
30		.385	.384	.357	.306	.284	.193	.057	-.027	.014	-.033		
15		.479	.434	.413	.381	.332	.214	.009	-.066	-.082	-.061	-.150	
3				.469		.399	.184	-.043	-.122	-.140	-.125	-.078	-.033
0	.557		.455		.434		.159		-.129		-.116	-.081	-.056
-3				.425		.327	.115	-.060	-.146	-.140	-.124	-.111	-.115
-15		.328	.256	.229	.204	.159	.059	-.096	-.142	-.134	-.054	-.035	
-30		.181	.162	.165	.124	.106	.043	-.059	-.117	-.094	-.071		
-45			.148		.106	.100	.035	-.052	-.089	-.083			
-57½					.119			-.034	-.032				
-P.L.	.517	.181	.148	.128	.119	.086	.045	-.016	-.032	-.083	-.071	-.035	-.115
α=6.5°; β=-8°													
P.L.	.530	.478	.442	.423	.397	.325	.255	.164	.136	.050	.003	-.148	-.068
57½					.397			.143	.136				
45			.442		.379	.346	.249	.126	.075	.050			
30		.478	.487	.454	.395	.375	.270	.116	.024	.075	.003		
15		.527	.501	.482	.449	.406	.279	.055	-.033	-.050	-.044	-.148	
3				.455		.405	.193	-.042	-.121	-.177	-.226	-.149	-.068
0	.530		.443		.402		.138		-.154		-.212	-.161	-.086
-3				.378		.270	.070	-.112	-.180	-.196	-.218	-.160	-.084
-15		.234	.169	.129	.101	.056	-.023	-.147	-.179	-.163	-.068	-.046	
-30		.087	.052	.065	.043	.028	-.024	-.107	-.154	-.130	-.068		
-45			.061		.035	.036	-.019	-.095	-.125	-.112			
-57½					.049			-.071	-.069				
-P.L.	.460	.087	.061	.054	.049	.032	-.003	-.053	-.069	-.112	-.068	-.046	-.084
α=-6.0°; β=0.3°													
P.I.	.900	.445	.321	.269	.219	.154	.100	.010	.042	.002	.045	-.002	.077
57½					.219		.085	.007	.012				
45			.321		.231	.214	.117	-.002	-.067	.002			
30		.445	.386	.371	.313	.276	.177	.033	-.018	-.057	.045		
15		.679	.587	.547	.512	.438	.286	.047	-.030	-.032	-.027	-.002	
3				.609		.669	.396	.102	-.010	-.030	-.055	.025	.077
0	.900		.811		.801		.405		.002		-.043	.030	.087
α=-3.0°; β=0.3°													
P.L.	.804	.390	.291	.243	.203	.148	.096	.036	.033	-.009	.020	-.022	.060
57½					.203			.010	.033				
45			.291		.210	.197	.108	.001	-.061	-.009			
30		.390	.344	.335	.278	.244	.155	.025	-.056	-.056	.020		
15		.600	.517	.477	.446	.379	.243	.022	-.048	-.055	-.016	-.022	
3				.710		.610	.337	.064	-.038	-.055	-.067	.010	.060
0	.804		.723		.698		.351		-.028		-.057	.017	.069

TABLE XIII.- PRESSURE COEFFICIENTS FOR CONFIGURATION WITH FORWARD-LOCATED ROUND-WINDSHIELD CANOPY - Concluded

(b) M=2.01

x/l / ϕ, deg	.002	.036	.088	.124	.160	.212	.260	.311	.356	.440	.600	.828	.968
α=0.4°; β=0°													
P.L.	.715	.357	.281	.245	.207	.156	.105	.044	.033	−.012	−.004		.041
57½					.207			.022	.033				
45			.281		.207	.194	.112	.005	−.047	−.012			
30		.357	.322	.316	.260	.233	.150	.023	−.054	−.041	−.004		
15		.536	.462	.431	.402	.345	.214	.007	−.063	−.071	−.012		
3				.622		.529	.278	.025	−.067	−.082	−.086	−.010	.041
0	.715		.628		.604		.285		−.066		−.079	−.005	.049
α=3.0°; β=0.3°													
P.L.	.628	.306	.247	.213	.190	.145	.092	.030	.018	−.033	−.030	−.045	.026
57½					.190		.069	.011	.018				
45			.247		.185	.175	.097	−.003	−.048	−.033			
30		.306	.285	.275	.225	.201	.005	.126	−.067	−.046	−.030		
15		.464	.398	.368	.341	.287	.169	−.020	−.081	−.087	−.026	−.045	
3				.536		.450	.216	−.010	−.090	−.092	−.088	−.014	.026
0	.628		.546		.523		.226		−.085		−.081	−.011	.034
α=6.5°; β=0°													
P.L.	.555	.282	.239	.215	.201	.155	.104	.035	.014	−.046	−.064	−.081	−.009
57½					.201			.016	.014				
45			.239		.186	.175	.098	−.002	−.045	−.046			
30		.282	.273	.258	.212	.192	.116	−.004	−.076	−.047	−.064		
15		.412	.351	.329	.300	.249	.139	−.042	−.105	−.112	−.057	−.081	
3				.457		.373	.154	−.056	−.128	−.119	−.098	−.040	−.009
0	.555		.466		.438		.158		−.124		−.095	−.037	−.001
α=9.0°; β=0.3°													
P.L.	.491	.243	.211	.196	.187	.145	.098	.030	.006	−.058	−.081	−.082	−.030
57½					.187		.075	.011	.006				
45			.211		.172	.157	.084	−.011	−.049	−.058			
30		.243	.240	.226	.183	.168	−.019	.097	−.086	−.053	−.081		
15		.354	.296	.277	.251	.207	.104	−.064	−.121	−.127	−.070	−.082	
3				.389		.311	.110	−.082	−.144	−.128	−.090	−.046	−.030
0	.491		.400		.377		.117		−.141		−.089	−.046	−.028
α=12.0°; β=0.3°													
P.L.	.431	.218	.198	.191	.185	.148	.102	.033	.006	−.062	−.097	−.089	−.048
57½					.165		.078	.017	.006				
45			.198		.170	.152	.083	−.008	−.043	−.062			
30		.218	.226	.210	.170	.158	−.025	.088	−.089	−.054	−.097		
15		.308	.260	.241	.215	.177	.082	−.078	−.133	−.137	−.090	−.089	
3				.327		.255	.068	−.109	−.159	−.135	−.084	−.062	−.048
0	.431		.339		.316		.071		−.157		−.085	−.063	−.046

TABLE XI. - [illegible] COEFFICIENTS FOR CONFIGURATION WITH REARWARD-LOCATED FLAT-WINGSHIELD CANOPY

(a) M=1.41

x/l / β, deg	-.002	.006	.035	.072	.137	.181	.206	.210	.228	.254	.306	.385	.444	.606	.862	.990
α=0.4°; β=0°																
F.L.		.601	.443		.059				.027	.305	-.082	-.229		-.110		.067
33⅓					.059	.042					-.090	-.119				
22⅔			.443	.291		.047				-.065		-.241	-.175	-.140		
13⅓			.481													
12	.704				.211	.122			.003		-.213		-.198	-.141		
9			.594													
7½				.553												
6					.525											
5						.233										
3		.789			.519	.410			-.254	-.186	-.177	-.228	-.261	-.128	-.057	.067
0				.611				.209		-.205		-.226		-.215		
α=0.4°; β=-4°																
F.L.		.720	.556		.159				.111	.086	-.016	-.058		-.119		.053
33⅓					.159	.119					-.011	-.058				
29⅓			.556	.400		.171				.031		-.173	-.138	-.119		
13⅓			.596													
12	.726				.334	.245			.114		-.158		-.126	-.194		
9			.664													
7½				.614												
6					.512											
5						.293										
3		.796			.530	.421			-.135	-.118	-.230	-.261	-.247	-.221	-.080	.053
0				.599				.206		-.229		-.270		-.200		
-3		.772			.501	.367			-.156	-.257	-.213	-.261	-.258	-.165	-.121	.041
-5						.196										
-6					.304											
-7½				.158												
-9			.495													
-12	.655				.083	-.016			-.113		-.269		-.233	-.119		
-13⅓			.323													
-22⅔			.317	.177		-.176				-.167		-.305	-.183	-.112		
-33⅓					-.036	-.063					-.160	-.177				
-F.L.		.410	.317		-.036				-.042	-.069	-.111	-.177		-.112		.041
α=0.4°; β=-8°																
F.L.		.790	.652		.265				.199	.170	.052	.011		-.130		.004
33⅓					.265	.258					.070	.011				
22⅔			.652	.464		.292				.127		-.103	-.080	-.130		
13⅓			.683													
12	.719				.384	.360			.208		-.110		-.173	-.238		
9			.706													
7½				.650												
6					.550											
5						.345										
3		.789			.532	.414			-.243	-.117	-.262	-.385	-.240	-.257	-.114	.004
0				.526				.202		-.242		-.405		-.296		
-3		.766			.478	.367			-.375	-.330	-.343	-.341	-.253	-.272	-.149	.005
-5						.172										
-6					.295											
-7½				.358												
-9			.427													
-12	.607				-.021	-.132			-.220		-.312		-.303	-.167		
-13⅓			.029													
-22⅔			.183	.060		-.155				-.271		-.256	-.205	-.116		
-33⅓					-.226	-.163					-.224	-.235				
-F.L.		.216	.283		-.226				-.122	-.241	-.201	-.235		-.116		.005

TABLE XIV.- PRESSURE COEFFICIENTS FOR CONFIGURATION WITH REARWARD-LOCATED FLAT-WINDSHIELD CANOPY - Continued

(a) M=1.41

z/l / φ, deg	-.002	.006	.035	.072	.137	.181	.206	.210	.228	.264	.306	.365	.414	.606	.862	.990
α=6.5°; β=0°																
F.L.		.497	.388		.081				.033	.011	-.074	-.120		-.134		.124
33½					.081	.060					-.073	-.120				
22½			.388	.260		.053				-.052		-.238	-.211	-.134		
13½			.416													
12	.561			.407	.152	.074			-.026		-.243		-.208	-.154		
9			.506													
7½				.445												
6					.330											
5						.132										
3		.633			.397	.293	.165		-.303	-.249	-.228	-.259	-.224	-.156		.124
0				.496				.112		-.271		-.255		-.222		-.055
α=6.5°; β=-4°																
F.L.		.594	.488		.169				.103	.062	-.019	-.068		-.214		.056
33½					.169	.118					-.009	-.008				
22½			.422	.350		.160				.029		-.176	-.173	-.114		
13½			.524													
12	.570			.392	.268	.182			.070		-.205		-.249	-.266		
9			.569													
7½				.504												
6					.388											
5						.190										
3		.633			.400	.284	.156		-.197	-.216	-.304	-.317	-.285	-.182		.056
0				.486				.104		-.228		-.306		-.186		-.052
-3		.616			.377	.267	.158		-.201	-.313	-.264	-.284	-.268	-.188		.028
-5						.093										
-6					.219											
-7½				.353												
-9			.417													
-12	.527			.403	.033	-.057			-.138		-.296		-.209	-.122		
-13½			.273													
-22½			.280	.149		-.060				-.243		-.287	-.224	-.141		
-33½					-.007	-.032					-.140	-.173				
-F.L.		.360	.280		-.007				-.037	-.058	-.289	-.173		-.111		.028
α=6.5°; β=-8°																
F.L.		.612	.573		.263				.182	.160	.047	-.010		-.182		.015
33½					.263	.212					.064	-.010				
22½			.573	.455		.263				.110		-.118	-.127	-.182		
13½			.594													
12	.546			.394	.260	.284			.148		-.168		-.235	-.320		
9			.597													
7½				.532												
6					.413											
5						.234										
3		.624			.394	.297	.159		-.114	-.195	-.339	-.424	-.407	-.178		.015
0				.470				.099		-.312		-.455		-.200		-.049
-3		.600			.351	.259	.155		-.121	-.317	-.182	-.394	-.359	-.185		-.002
-5						.069										
-6					.178											
-7½				.252												
-9			.249													
-12	.442			.393	-.074	-.178			-.247		-.336		-.268	-.131		
-13½			.056													
-22½			.171	.043		-.169				-.227		-.331	-.216	-.110		
-33½					-.087	-.118					-.197	-.219				
-F.L.		.194	.171		-.087				-.099	-.119	-.179	-.219		-.110		-.002

TABLE XIV.- PRESSURE COEFFICIENTS FOR CONFIGURATION WITH REARWARD-LOCATED FLAT-WINDSHIELD CANOPY - Continued

(b) M=2.01

β, deg \ x/l	-.002	.006	.035	.072	.137	.181	.206	.210	.228	.264	.306	.365	.444	.606	.862	.990
$\alpha=0.4°, \beta=0°$																
P.L.		.532	.401		.090				.058	.043	.001	-.023		-.083		.054
33½					.090	.065					-.015	-.023				
22½			.401	.315		.087				.011		-.110	-.085	-.083		
13½			.460													
12				.415	.255	.182			.205		-.056		-.118	-.077		
9			.622													
7½				.544												
6					.488											
5						.362										
3		.792			.569	.480	.385		-.074	-.060	-.083	-.092	-.112	-.087	-.037	.054
0				.626				.363		-.090		-.089		-.091		.044
$\alpha=0.4°, \beta=-4°$																
P.L.		.619	.497		.166				.123	.106	.053	.029		-.068		.019
33½					.166	.116					.047	.029				
22½			.497	.411		.080				.058		-.059	-.065	-.068		
13½			.569													
12				.527	.342	.275			.185		-.012		-.101	-.103		
9			.686													
7½				.623												
6					.538											
5						.380										
3		.783			.573	.490	.388		-.008	-.008	-.095	-.131	-.136	-.112	-.077	.019
0				.630				.350		-.103		-.132		-.132		-.001
-3		.778			.551	.463	.377		-.096	-.108	-.094	-.112	-.141	-.134	-.109	-.009
-5						.336										
-6					.415											
-7½				.464												
-9			.556													
-12				.237	.167	.096			.023		-.103		-.142	-.080		
-13½			.315													
-22½			.288	.213		.001				-.067		-.164	-.124	-.077		
-33½					.011	-.018					-.077	-.072				
-P.L.		.398	.288		.011				-.007	-.021	-.052	-.072		-.077		-.009
$\alpha=0.4°, \beta=-8°$																
P.L.		.671	.585		.263				.206	.188	.126	.096		-.026		-.016
33½					.263	.247					.125	.096				
22½			.585	.510		.288				.184		.007	.012	-.026		
13½			.654													
12				.623	.447	.379			.277		.038		-.059	-.093		
9			.732													
7½				.667												
6					.527											
5						.427										
3		.760			.586	.508	.406		.066	.030	-.073	-.140	-.188	-.222	-.145	-.046
0				.634				.349		-.069		-.169		-.214		-.066
-3		.751			.516	.450	.367		-.101	-.163	-.167	-.187	-.202	-.236	-.149	-.062
-5						.316										
-6					.378											
-7½				.432												
-9			.521													
-12				-.026	.020	.027			-.020		-.139		-.176	-.133		
-13½			.036													
-22½			.175	.111		-.081				-.138		-.217	-.158	-.097		
-33½					-.063	-.103					-.133	-.122				
-P.L.		.299	.175		-.063				-.068	-.079	-.104	-.122		-.097		-.062

TABLE XIV.- PRESSURE COEFFICIENTS FOR CONFIGURATION WITH REAR-MOUNTED FLAT-WINDSHIELD CANOPY - Concluded

(b) M=2.01

x/l / ϕ, deg	-.002	.006	.035	.072	.137	.181	.206	.230	.228	.261	.306	.365	.414	.606	.862	.990
α=6.5° ; β=0°																
F.L.		.431	.332		.089				.053	.038	-.008	-.028		-.115		.044
31½					.089	.068					-.013	-.028				
22½			.332	.266		.073				.007		-.104	-.093	-.125		
13½			.378													
12				.336	.290	.126			.058		-.089		-.112	-.108		
9			.504													
7½				.429												
6					.361											
5						.214										
3		.605			.122	.343	.259		-.115	-.111	-.230	-.130	-.133	-.077	-.042	.014
0				.490				.245		-.132		-.125		-.078		-.021
α=6.5° ; β=-4°																
F.L.		.500	.411		.254				.110	.094	.037	.014		-.090		-.004
33½					.254	.140					.043	.014				
22½			.411	.349		.157				.075		-.057	-.060	-.090		
13½			.466													
12				.426	.268	.230			.130		-.053		-.127	-.152		
9			.551													
7½				.494												
6					.405											
5						.268										
3		.598			.426	.353	.265		-.052	-.067	-.141	-.176	-.173	-.123	-.096	-.004
0				.488				.234		-.168		-.170		-.114		-.006
-3		.588			.406	.325	.252		-.144	-.154	-.146	-.152	-.163	-.123	-.114	-.026
-5						.220										
-6					.291											
-7½				.347												
-9			.439													
-12				.326	.099	.039			-.023		-.135		-.149	-.083		
-22½			.249													
-22½			.236	.273		-.013				-.065		-.150	-.231	-.116		
-33½					.017	-.008					-.066	-.073				
-F.L.		.313	.236		.017				-.005	-.019	-.055	-.073		-.116		-.026
α=6.5° ; β=-8°																
F.L.		.522	.480		.225				.171	.160	.095	.069		-.059		-.019
33½					.225	.218					.108	.069				
22½			.480	.422		.214				.153		-.007	-.017	-.059		
13½			.517													
12				.496	.353	.294			.203		-.019		-.106	-.138		
9			.565													
7½				.535												
6					.439											
5						.300										
3		.560			.431	.363	.276		-.002	-.045	-.131	-.192	-.235	-.207	-.118	-.029
0				.493				.226		-.129		-.231		-.207		-.047
-3		.557			.400	.335	.248		-.147	-.203	-.214	-.217	-.231	-.231	-.144	-.032
-5						.204										
-6					.255											
-7½				.315												
-9			.406													
-12				-.065	-.038	-.035			-.073		-.169		-.176	-.130		
-23½			.009													
-27½			.136	.081		-.086				-.127		-.187	-.156	-.097		
-33½					-.044	-.073					-.105	-.109				
-F.L.		.160	.136		-.044				-.051	-.062		-.109		-.097		-.032

TABLE XV.- PRESSURE COEFFICIENTS FOR CONFIGURATION WITH REARWARD-LOCATED VEE-WINDSHIELD CANOPY

(a) M=1.41

x/l / ø, deg	.010	.030	.083	.133	.176	.224	.251	.260	.269	.293	.300	.360	.440	.600	.856	.992
α=0.4° ; β=0°																
P.L.	.426	.347	.352	.318	.304	.092		-.014			-.045	-.114		-.015		.090
33½								-.078				-.114				
30					.304											
29						.024										
27½						.212										
24								-.085								
22½				.328				.186	-.076		-.293	-.330	-.246	-.015		
12			.352	.393	.421	.424		.391		.209	-.064	-.425	-.266	-.176		
4½								.295								
3		.347	.419		.507		.282	.078			-.061	-.134	-.293			.090
1½						.465										
1		.373	.437	.478												
0								.130			-.033	-.176				.077
α=0.4° ; β=-4°																
P.L.	.535	.455	.466	.424	.402	.185		.062			.026	-.051		-.014		.062
33½								.015				-.051				
30					.402											
29						.140										
27½						.296										
24								-.128								
22½				.424				.230	-.039		-.184	-.236	-.198	-.014		
12			.466	.492	.500	.479		.434		.234	-.045	-.425	-.211	-.186		
4½								.315								
3		.455	.511		.573		.259	-.100			-.134	-.216	-.269			.062
1½						.480										
1		.476	.510	.547												
0								.094			-.047	-.203				.083
-1		.234	.287	.327												
-1½						.371										
-3		.221	.306		.391		.271	.142			-.053	-.195	-.310			.046
-4½								.243								
-12			.226	.275	.313	.335		.323		.162	-.095	-.430	-.359	-.148		
-22½				.204				.142	-.113		-.353	-.426	-.276	.009		
-24								-.126								
-27½						.139										
-29						-.098										
-30					.191											
-33½								-.187				-.176				
-P.L.	.273	.221	.226	.204	.191	-.009		-.097			-.120	-.176		.009		.046

TABLE XV.- PRESSURE COEFFICIENTS FOR CONFIGURATION WITH REARWARD-LOCATED VEE-WINDSHIELD CANOPY - Continued

(a) M=1.41

x/l / φ, deg	.010	.030	.083	.133	.176	.224	.251	.260	.269	.293	.300	.360	.440	.600	.856	.992
α=0.4°; β=-8°																
P.L.	.629	.570	.589	.525	.500	.287		.153			.109	.022		-.004		.006
33½								.116				.022				
30					.500											
29						.264										
27½						.392										
24								-.097								
22½				.525				.290	.033		-.078	-.138	-.134	-.004		
12			.589	.597	.585	.538		.480		.268	-.020	-.382	-.249	-.189		
4½								.338								
3		.570	.583		.617		.245	-.273			-.360	-.264	-.258			.006
1½						.445										
1		.558	.548	.560												
0								-.019			-.113	-.243				.085
-1		-.070	-.078	-.051												
-1½						.086										
-3		.092	.109		-.001		.057	.014			-.109	-.246	-.317			-.002
-4½								-.034								
-12			.101	.155	.196	.228		.241		.127	-.116	-.403	-.394	-.202		
-22½				.078				.087	-.154		-.383	-.494	-.371	.039		
-24								-.133								
-27½						.060										
-29						-.217										
-30					.065											
-33½								-.299				-.235				
-P.L.	.079	.092	.101	.078	.065	-.110		-.174			-.192	-.235		.039		-.002
α=6.5°; β=0°																
P.L.	.321	.268	.288	.285	.308	.118		.016			-.025	-.105		-.221		.102
33½								-.037				-.105				
30					.308											
29						.084										
27½						.208										
24								-.121								
22½				.285				.180	-.101		-.238	-.249	-.253	-.221		
12			.288	.335	.350	.341		.321		.159	-.087	-.464	-.254	-.199		
4½								.198								
3		.268	.327		.392		.193	-.041			-.139	-.251	-.335			.102
1½						.363										
1		.288	.340	.381												
0								.040			-.110	-.237		-.117		.139

TABLE XV.- PRESSURE COEFFICIENTS FOR CONFIGURATION WITH REARWARD-LOCATED VEE-WINDSHIELD CANOPY - Continued

(a) M=1.41

x/l / φ, deg	.010	.030	.083	.133	.176	.224	.251	.260	.269	.293	.300	.360	.440	.600	.856	.992
α=6.5°; β=-4°																
P.L.	.426	.377	.396	.369	.392	.156		.092			.014	-.146		-.269		.060
33½								.053				-.016				
30					.392											
29						.192										
27½						.295										
24								-.055								
22½				.369				.247	-.037		-.142	-.167	-.200	-.269		
19			.396	.434	.431	.398		.360		.185	-.071	-.133	-.286	-.247		
14½								.212								
3		.377	.416		.466		.180	-.235			-.196	-.275	-.285			.068
1½						.362										
1		.388	.407	.436												
0								.017			-.138	-.268		-.174		.068
-1		.141	.200	.187												
-1½						.222										
-3		.144	.221		.297		.187	.025			-.128	-.254	-.351			.033
-4½								.151								
-12			.176	.227	.258	.267		.262		.122	-.118	-.470	-.331	-.140		
-22½				.193				.147	-.149		-.343	-.345	-.294	-.202		
-24								-.144								
-27½						.126										
-29						-.032										
-30					.216											
-33½								-.125				-.160				
-P.L.	.174	.144	.176	.183	.216	.032		-.061			-.095	-.160		-.202		.033
α=6.5°; β=-8°																
P.L.	.517	.484	.500	.431	.461	.259		.166			.123	.019		-.232		.029
33½								.153				.019				
30					.461											
29						.307										
27½						.390										
24								.023								
22½				.431				.304	.055		-.047	-.084	-.140	-.232		
12			.500	.530	.501	.450		.404		.213	-.048	-.371	-.324	-.280		
4½								.238								
3		.484	.485		.504		.191	-.346			-.409	-.428	-.317			.029
2½						.328										
1		.467	.438	.428												
0								-.130			-.198	-.309		-.299		.034
-1		-.171	-.149	-.112												
-1½						.015										
-3		.019	-.014		-.103		-.025	-.102			-.193	-.318	-.344			.025
-4½								-.154								
-12			.051	.116	.158	.182		.202		.097	-.125	-.473	-.414	-.158		
-22½				.088				.107	-.185		-.390	-.435	-.322	-.176		
-24								-.147								
-27½						.048										
-29						-.135										
-30					.119											
-33½								-.213				-.211				
-P.L.	-.009	.019	.061	.088	.119	-.051		-.134			-.168	-.211		-.176		.025

TABLE XV.- PRESSURE COEFFICIENTS FOR CONFIGURATION WITH REARWARD-LOCATED VEE-WINDSHIELD CANOPY - Continued

(b) M=2.01

x/l / ϕ,deg	.010	.030	.083	.133	.176	.224	.251	.260	.269	.293	.300	.360	.440	.600	.856	.992
α=0.4°; β=0°																
P.L.	.388	.329	.320	.286	.297	.103		.044			.017	-.018		-.104		.077
33½								-.008				-.018				
30					.297											
29						.079										
27½						.287										
24								.073								
22½				.286				.289	.105		-.068	-.143	-.113	-.104		
12			.320	.354	.379	.396		.433		.375	.183	-.172	-.168	-.060		
4½								.362								
3		.329	.406		.464		.346	.129			.030	-.007	-.078	-.120		.077
1½						.473										
1		.370	.443	.477												
0								.181				.006		-.126		.094
α=0.4°; β=-4°																
P.L.	.520	.442	.432	.385	.404	.201		.133			.104	.055		-.085		.036
33½								.091				.055				
30					.404											
29						.189										
27½						.381										
24								.128								
22½				.385				.362	.159		-.021	-.069	-.034	-.085		
12			.432	.467	.485	.493		.519		.442	.237	-.150	-.141	-.059		
4½								.422								
3		.442	.508		.557		.394	.015			-.071	-.016	-.080	-.091		.036
1½						.513										
1		.473	.521	.550												
0								.152				-.014		-.116		.030
-1		.248	.317	.331												
-1½						.363										
-3		.228	.311		.384		.318	.191			.060	-.009	-.085	-.125		-.027
-4½								.286								
-12			.220	.257	.287	.306		.340		.295	.127	-.165	-.150	-.105		
-22½				.197				.220	.056		-.101	-.183	-.170	-.090		
-24								.023								
-27½						.201										
-29						-.006										
-30					.194											
-33½								-.088				-.084				
-P.L.	.259	.228	.220	.197	.194	.022		-.026			-.050	-.084		-.090		-.027

TABLE XV - PRESSURE COEFFICIENTS FOR CONFIGURATION WITH REARWARD-LOCATED VEE-WINDSHIELD CANOPY - Continued

(b) M=2.01

ϕ, deg \ x/l	.010	.030	.083	.133	.176	.224	.251	.260	.269	.293	.300	.360	.440	.600	.856	.952
α=0.4° ; β=-8°																
P.L.	.620	.562	.544	.450	.492	.285		.217			.187	.123		-.041		-.035
33½								.189				.123				
30					.492											
29						.305										
27½						.471										
24								.174								
22½				.450				.423	.206		.049	.008	.027	-.041		
12			.544	.581	.590	.587		.603		.505	.280	-.119	-.124	-.086		
4½								.475								
3		.562	.599		.640		.452	-.012			-.109	-.141	-.143	-.143		-.035
1½						.532										
1		.552	.566	.584												
0								.045				-.104		-.142		-.009
-1		.091	.031	.050												
-1½						.143										
-3		.125	.227		.232		.152	.108			.030	-.068	-.140	-.144		-.034
-4½								.197								
-12			.126	.165	.195	.213		.245		.214	.069	-.172	-.148	-.149		
-22½				.101				.148	.009		-.127	-.202	-.196	-.136		
-24								-.023								
-27½						.122										
-29						-.072										
-30					.095											
-33½								-.149				-.179				
-P.L.	.124	.125	.126	.101	.095	-.056		-.095			-.111	-.179		-.136		-.034
α=6.5° ; β=0°																
P.L.	.287	.252	.254	.239	.254	.113		.054			.030	-.016		-.123		.029
33½								.022				-.016				
30					.254											
29						.095										
27½						.251										
24								.033								
22½				.239				.230	.067		-.086	-.122	-.087	-.123		
12			.254	.299	.316	.324		.347		.298	.130	-.187	-.175	-.094		
4½								.266								
3		.252	.321		.361		.253	.029			-.049	-.054	-.109	-.091		.029
1½						.347										
1		.275	.332	.357												
0								.101				-.038		-.099		.041

TABLE XV.- PRESSURE COEFFICIENTS FOR CONFIGURATION WITH REARWARD-LOCATED VEE-WINDSHIELD CANOPY - Concluded

(b) M=2.01

x/ℓ / φ, deg	.010	.030	.083	.133	.176	.224	.251	.260	.269	.293	.300	.360	.440	.600	.856	.992
$\alpha=6.5°;\ \beta=-4°$																
P.I.	.401	.354	.316	.304	.338	.179		.124			.103	.043		-.089		.037
33½								.113				.043				
30					.338											
29						.211										
27½						.346										
24								.092								
22½				.304				.251	.109		-.050	-.056	-.037	-.089		
12			.316	.298	.406	.406		.420		.353	.173	-.170	-.170	-.182		
4½								.322								
3		.354	.407		.444		.294	-.065			-.140	-.188	-.181	-.116		.037
1½						.384										
1		.378	.407	.422												
0								.076				-.066		-.128		.029
-1		.158	.195	.203												
-1½						.257										
-3		.150	.225		.279		.219	.096			-.003	-.055	-.116	-.122		-.023
-4½								.203								
-12			.167	.203	.229	.242		.270		.235	.083	-.192	-.196	-.079		
-22½				.155				.177	.031		-.115	-.172	-.135	-.131		
-24								.003								
-27½						.186										
-29						.016										
-30					.181											
-33½								-.053				-.059				
-P.I.	.165	.150	.167	.165	.181	.049		-.001			-.023	-.059		-.131		-.023
$\alpha=6.5°;\ \beta=-8°$																
P.I.	.493	.454	.423	.330	.379	.230		.177			.167	.132		-.050		-.031
33½								.203				.102				
30					.379											
29						.304										
27½						.435										
24								.154								
22½				.330				.248	.159		.053	.012	.013	-.050		
12			.423	.504	.497	.484		.491		.402	.209	-.132	-.133	-.131		
4½								.366								
3		.454	.462		.504		.340	-.067			-.135	-.173	-.169	-.179		-.031
1½						.389										
1		.450	.439	.442												
0								-.045				-.195		-.158		-.015
-1		-.023	-.064	-.050												
-1½						.060										
-3		.016	.029		.064		.029	-.016			-.071	-.163	-.207	-.151		-.024
-4½								.046								
-12			.073	.112	.139	.159		.186		.161	.031	-.195	-.165	-.110		
-22½				.082				.119	-.009		-.140	-.197	-.199	-.117		
-24								-.041								
-27½						.111										
-29						-.053										
-30					.100											
-33½								-.113				-.101				
-P.I.	.022	.016	.073	.082	.100	-.015		-.056			-.078	-.101		-.117		-.024

TABLE XVI.- PRESSURE COEFFICIENTS FOR CONFIGURATION WITH REARWARD-LOCATED ROUND-WINDSHIELD CANOPY

(a) M=1.41

x/ℓ / ϕ, deg	.010	.030	.068	.096	.133	.176	.224	.260	.302	.360	.440	.600	.856	.992
α=0.4°; β=0°														
P.L.	.687	.491	.372	.308	.237	.124	-.017	-.061	-.095	-.157	-.152	-.156	-.069	.073
33½						.124	-.026		-.139	-.157				
22½				.308		.163	.007		-.199	-.238	-.164	-.156		
12		.491		.442	.350	.235	.036	-.072	-.188	-.292	-.235	-.148	-.069	
3	.687	.648	.594	.567	.545		.060		-.198		-.253	-.187	-.060	.073
0		.647		.589			.100	-.009		-.262		-.154		.081
α=0.4°; β=-4°														
P.L.	.738	.613	.501	.442	.357	.233	.075	.015	-.024	-.097	-.108	-.158	-.144	.059
33½						.233	.057		-.069	-.097				
22½				.442		.267	.097		-.119	-.159	-.118	-.158		
12		.613		.563	.459	.334	.133	.006	-.134	-.246	-.203	-.162	-.144	
3	.738	.685	.612	.582	.559		.103		-.193		-.263	-.287	-.086	.059
0		.617		.561			.089	-.005		-.290		-.220		.058
-9	.601	.577	.529	.514	.490		-.006		-.229		-.294	-.212	-.129	.044
-12		.346		.297	.216	.118	-.074	-.158	-.254	-.332	-.278	-.125	-.042	
-22½				.176		.054	-.083		-.274	-.304	-.200	-.133		
-33½						.018	-.118		-.206	-.212				
-P.L.	.601	.346	.232	.176	.114	.018	-.099	-.133	-.158	-.212	-.193	-.133	-.042	.044
α=0.4°; β=-8°														
P.L.	.746	.718	.625	.578	.467	.351	.176	.100	.055	-.028	-.053	-.134	-.269	.009
33½						.351	.162		.011	-.028				
22½				.578		.367	.193		-.030	-.099	-.065	-.134		
12		.718		.657	.551	.417	.215	.077	-.081	-.200	-.173	-.203	-.269	
3	.746	.688	.583	.550	.528		.109		-.216		-.332	-.457	-.179	.009
0		.544		.482			.035	-.039		-.345		-.448		.011
-9	.472	.463	.415	.412	.388		-.096		-.299		-.414	-.370	-.160	.008
-12		.180		.127	.061	-.029	-.195	-.262	-.336	-.390	-.341	-.167	-.087	
-22½				.039		-.058	-.179		-.348	-.374	-.234	-.130		
-33½						-.057	-.200		-.274	-.267				
-P.L.	.472	.180	.086	.039	-.001	-.087	-.174	-.202	-.221	-.267	-.229	-.130	-.087	.008
α=6.5°; β=-4°														
P.L.	.583	.502	.426	.406	.327	.236	.103	.037	-.003	-.097	-.128	-.210	-.126	.058
33½						.236	.120		-.048	-.097				
22½				.406		.253	.094		-.115	-.170	-.153	-.210		
12		.502		.497	.397	.278	.060	-.046	-.182	-.273	-.237	-.253	-.126	
3	.583	.592	.498	.464	.452		.012		-.267		-.289	-.196		.058
0		.541		.446			-.013	-.101		-.334		-.177		.058
-9	.472	.491	.425	.410	.384		-.088		-.284		-.261	-.172		.043
-12		.275		.260	.183	.089	-.092	-.191	-.270	-.344	-.237	-.121	-.060	
-22½				.166		.065	-.059		-.251	-.276	-.209	-.160		
-33½						.049	-.065		-.176	-.199				
-P.L.	.472	.275	.198	.166	.136	.049	-.055	-.101	-.128	-.199	-.205	-.160	-.060	.043

TABLE XVI.- PRESSURE COEFFICIENTS FOR CONFIGURATION WITH REARWARD-LOCATED ROUND-WINDSHIELD CANOPY - Continued

(a) M=1.41

x/l / φ, deg	.010	.030	.068	.096	.133	.176	.224	.260	.302	.360	.440	.600	.856	.992
α=6.5°; β=-8°														
P.L.	.589	.584	.532	.534	.422	.331	.193	.114	.069	-.029	-.072	-.182	-.234	.007
33½						.331	.221		.026	-.029				
22½				.534		.344	.178		-.050	-.108	-.106	-.182		
12		.584		.575	.467	.344	.130	.012	-.142	-.248	-.224	-.274	-.234	
3	.589	.591	.466	.422	.418		.006		-.307		-.414	-.342		.007
0		.467		.361			-.060	-.144		-.405		-.335		.015
-3	.362	.350	.313	.306	.276		-.181		-.362		-.390	-.394		.011
-12		.122		.104	.038	-.042	-.204	-.275	-.338	-.386	-.281	-.115	-.106	
-22½				.046		-.036	-.142		-.320	-.326	-.231	-.128		
-33½						-.042	-.146		-.233	-.245				
-P.L.	.362	.122	.075	.046	.033	-.042	-.128	-.160	-.184	-.245	-.228	-.128	-.106	.011
α=-6.0°; β=0.3°														
P.L.	.827	.557	.395	.311	.226	.095	-.045	-.089	-.106	-.148	-.118	-.096	-.038	.101
33½						.095	-.030		-.166	-.148				
22½				.311		.163	.004		-.211	-.253	-.133	-.096		
12		.557		.493	.399	.275	.063	-.035	-.156	-.255	-.216	-.111	-.038	
3	.827	.754	.715	.696	.681		.158		-.120		-.203	-.148		.101
0		.768		.728			.215	.067		-.195		-.150		.106
α=-3.0°; β=0.3°														
P.L.	.760	.516	.373	.294	.220	.101	-.037	-.077	-.103	-.157	-.134	-.123	-.050	.090
33½						.101	-.023		-.156	-.157				
22½				.294		.156	.001		-.212	-.247	-.147	-.123		
12		.516		.460	.365	.249	.041	-.060	-.176	-.274	-.221	-.123	-.050	
3	.760	.702	.653	.631	.617		.105		-.158		-.222	-.144		.090
0		.711		.664			.160	.013		-.228		-.145		.094
α=3.0°; β=0.3°														
P.L.	.613	.431	.326	.271	.220	.124	-.011	-.063	-.093	-.161	-.164	-.176	-.073	.080
33½						.124	-.014		-.138	-.161				
22½				.271		.142	-.004		-.203	-.237	-.173	-.176		
12		.431		.396	.305	.195	.004	-.104	-.213	-.303	-.225	-.148	-.073	
3	.513	.603	.534	.505	.492		.010		-.227		-.248	-.138		.080
0		.607		.538			.057	-.083		-.283		-.139		.095
α=6.0°; β=0.3°														
P.L.	.543	.387	.299	.266	.214	.134	.004	-.049	-.081	-.155	-.173	-.202	-.079	.104
33½						.134	.010		-.125	-.155				
22½				.266		.141	-.005		-.193	-.232	-.186	-.202		
12		.387		.370	.281	.175	-.011	-.120	-.228	-.312	-.231	-.159	-.079	
3	.543	.557	.482	.455	.439		-.029		-.253		-.245	-.134		.104
0		.560		.482			.012	-.123		-.299		-.135		.137

TABLE XVI.- PRESSURE COEFFICIENTS FOR CONFIGURATION WITH REARWARD-LOCATED FOUND-WINDSHIELD CANOPY - Continued

(a) M=1.41

x/l / φ, deg	.010	.030	.068	.096	.133	.176	.224	.260	.302	.360	.440	.600	.856	.992
α=9.0°; β=0.3°														
P.L.	.474	.344	.275	.260	.205	.139	.021	-.030	-.064	-.116	-.173	-.227	-.084	.140
33½						.139	.040		-.110	-.146				
22½				.260		.145	-.001		-.180	-/225	-.195	-.227		
12		.344		.353	.264	.160	-.022	-.130	-.238	-.315	-.240	-.164	-.084	
3	.474	.511	.437	.420	.393		-.061		-.272		-.234	-.129		.140
0		.516		.435			-.025	-.154		-.309		-.131		.173
α=12.0°; β=0.3°														
P.L.	.405	.301	.248	.245	.193	.135	.031	-.021	-.057	-.138	-.175	-.256	-.097	.164
33½						.135	.059		-.099	-.138				
22½				.245		.146	-.002		-.175	-.222	-.207	-.256		
12		.301		.334	.245	.142	-.034	-.142	-.251	-.324	-.258	-.175	-.097	
3	.405	.457	.398	.365	.346		-.094		-.294		-.227	-.131		.164
0		.466		.389			-.064	-.186		-.317		-.134		.179

(b) M=2.01

α=0.4°; β=-4°														
P.L.	.696	.535	.436	.400	.330	.241	.129	.080	.048	-.003	-.017	-.078	-.128	.018
33½						.241	.116		.010	-.003				
22½				.400		.291	.171		-.007	-.065	-.038	-.078		
12		.535		.555	.464	.383	.213	.109	-.010	-.102	-.099	-.091	-.128	
3	.696	.694	.619	.604	.605		.200		-.045		-.123	-.139	-.082	.018
0		.660		.586			.190	.082		-.124		-.137		.017
-3	.560	.580	.530	.535	.527		.122		-.082		-.130	-.138	-.120	-.013
-12		.290		.304	.245	.180	.044	-.030	-.108	-.162	-.147	-.095	-.025	
-22½				.256		.094	.009		-.120	-.170	-.124	-.095		
-33½						.045	-.042		-.109	-.106				
-P.L.	.560	.290	.197	.156	.122	.045	-.031	-.058	-.077	-.106	-.108	-.095	-.025	-.013
α=0.4°; β=-8°														
P.L.	.716	.635	.551	.530	.436	.351	.223	.165	.123	.057	.039	-.050	-.129	-.059
33½						.351	.211		.084	.057				
22½				.530		.393	.258		.057	-.004	.014	-.050		
12		.635		.660	.561	.470	.290	.170	.036	-.071	-.068	-.084	-.129	
3	.716	.703	.620	.595	.606		.214		-.051		-.154	-.206	-.156	-.059
0		.614		.537			.159	.064		-.153		-.227		-.049
-3	.456	.467	.452	.466	.457		.072		-.119		-.185	-.226	-.166	-.061
-12		.169		.174	.133	.076	-.039	-.095	-.157	-.198	-.177	-.145	-.079	
-22½				.043		.002	-.067		-.167	-.206	-.160	-.114		
-33½						-.038	-.109		-.153	-.146				
-P.L.	.456	.169	.086	.043	.030	-.038	-.091	-.110	-.124	-.140	-.144	-.114	-.079	-.061

TABLE XVI.- PRESSURE COEFFICIENTS FOR CONFIGURATION WITH REARWARD-LOCATED ROUND-WINDSHIELD CANOPY - Continued

(b) M=2.01

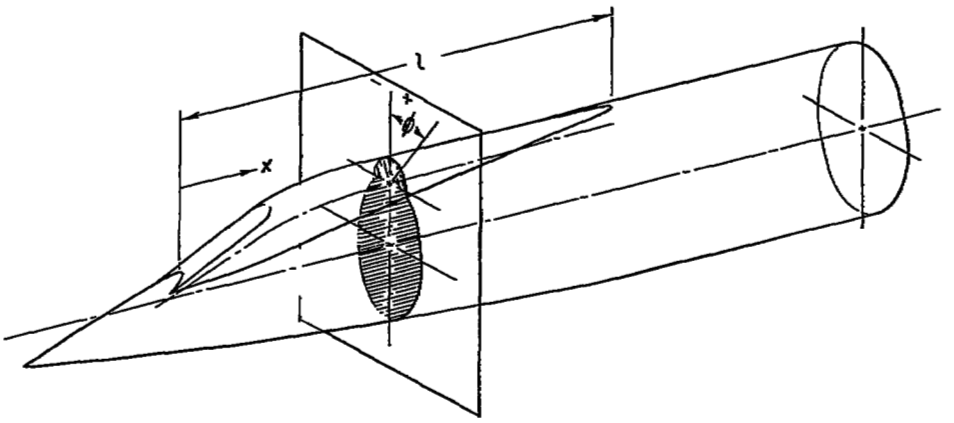
x/l / ϕ, deg	.010	.030	.068	.096	.133	.176	.224	.260	.302	.360	.440	.600	.856	.992
α=6.5°; β=-4°														
P.L.	.519	.410	.338	.323	.259	.200	.109	.077	.043	-.018	-.039	-.113	-.139	.001
33½						.200	.116		.007	-.018				
22½				.323		.246	.136		-.034	-.078	-.067	-.113		
12		.410		.456	.366	.291	.144	.049	-.063	-.147	-.139	-.144	-.139	
3	.519	.548	.474	.451	.449		.097		-.110		-.170	-.152	-.103	.001
0		.525		.438			.087	-.002		-.170		-.137		.012
-3	.405	.449	.398	.394	.383		.033		-.134		-.154	-.133	-.149	-.002
-12		.205		.237	.175	.118	-.001	-.064	-.133	-.182	-.161	-.097	-.054	
-22½				.125		.074	-.009		-.126	-.164	-.130	-.130		
-33½						.050	-.030		-.097	-.106				
-P.L.	.405	.205	.144	.125	.102	.050	-.016	-.046	-.066	-.106	-.110	-.130	-.054	-.002
α=6.5°; β=-8°														
P.L.	.532	.486	.418	.423	.331	.271	.177	.150	.115	.040	.012	-.082	-.153	-.021
33½						.271	.208		.074	.040				
22½				.423		.342	.215		.027	-.023	-.018	-.082		
12		.486		.542	.444	.363	.202	.097	-.026	-.119	-.117	-.134	-.153	
3	.532	.553	.466	.437	.446		.103		-.120		-.207	-.226	-.133	-.021
0		.470		.383			.053	-.023		-.202		-.223		-.026
-3	.299	.344	.311	.318	.306		-.020		-.178		-.225	-.247	-.157	-.049
-12		.086		.103	.065	.018	-.081	-.134	-.183	-.212	-.185	-.106	-.100	
-22½				.029		-.008	-.073		-.172	-.200	-.155	-.117		
-33½						-.022	-.091		-.137	-.141				
-P.L.	.299	.086	.044	.029	.025	-.022	-.075	-.094	-.111	-.141	-.140	-.117	-.100	-.049
α=-6.0°; β=0.3°														
P.L.	.818	.532	.395	.319	.260	.146	.051	.018	-.004	-.039	-.038	-.043	-.021	.097
33½						.146	.037		-.050	-.039				
22½				.319		.233	.124		-.053	-.112	-.070	-.043		
12		.532		.533	.450	.372	.201	.104	-.005	-.093	-.087	-.056	-.021	
3	.818	.799	.747	.749	.748		.287		.009		-.056	-.088	-.018	.097
0		.834		.780			.334	.200		-.052		-.087		.102
α=-3.0°; β=0.3°														
P.L.	.732	.473	.354	.292	.239	.138	.044	.009	-.016	-.050	-.055	-.073	-.040	.076
33½						.138	.035		-.054	-.050				
22½				.292		.207	.102		-.064	-.119	-.079	-.073		
12		.473		.479	.398	.327	.163	.071	-.033	-.115	-.109	-.071	-.040	
3	.732	.725	.668	.668	.665		.227		-.027		-.083	-.097	-.032	.076
0		.758		.694			.273	.146		-.083		-.096		.084

TABLE XVI.- PRESSURE COEFFICIENTS FOR CONFIGURATION WITH REARWARD-LOCATED ROUND-WINDSHIELD CANOPY - Concluded

(b) M=2.01

x/l / ϕ, deg	.010	.030	.068	.096	.133	.176	.224	.260	.302	.360	.440	.600	.856	.992
α=0°; β=0.3°														
P.L.	.651	.421	.314	.272	.224	.139	.042	.007	-.019	-.055	-.063	-.092	-.048	.064
33½						.139	.034		-.053	-.055				
22½				.272		.191	.088		-.070	-.124	-.085	-.092		
12		.421		.437	.357	.287	.132	.044	-.053	-.131	-.121	-.081	-.048	
3	.651	.658	.594	.590	.586		.176		-.058		-.102	-.104	-.040	.064
0		.683		.615			.217	.100		-.107		-.106		.072
α=3.0°; β=0.3°														
P.L.	.567	.370	.279	.249	.204	.135	.045	.007	-.020	-.063	-.072	-.111	-.058	.055
33½						.135	.031		-.052	-.063				
22½				.249		.175	.075		-.074	-.125	-.092	-.111		
12		.370		.395	.315	.249	.100	.020	-.073	-.144	-.132	-.093	-.058	
3	.567	.588	.524	.518	.512		.124		-.084		-.118	-.100	-.050	.055
0		.612		.540			.161	.051		-.131		-.104		.074
α=6.0°; β=0.3°														
P.L.	.488	.323	.244	.223	.182	.125	.045	.013	-.015	-.064	-.075	-.128	-.068	.050
33½						.125	.036		-.051	-.064				
22½				.223		.161	.064		-.079	-.125	-.100	-.128		
12		.323		.359	.281	.215	.076	-.003	-.093	-.159	-.145	-.110	-.068	
3	.488	.528	.462	.453	.445		.082		-.109		-.131	-.094	-.056	.050
0		.550		.474			.112	.014		-.149		-.096		.072
α=9.0°; β=0.3°														
P.L.	.417	.280	.215	.201	.165	.120	.045	.019	-.007	-.057	-.074	-.135	-.077	.029
33½						.120	.045		-.040	-.057				
22½				.201		.158	.060		-.078	-.118	-.100	-.135		
12		.280		.331	.255	.190	.060	-.019	-.104	-.167	-.151	-.124	-.077	
3	.417	.469	.412	.398	.387		.044		-.127		-.138	-.092	-.067	.029
0		.494		.416			.072	-.016		-.163		-.092		.056
α=12.0°; β=0.3°														
P.L.	.348	.246	.191	.183	.150	.104	.039	.018	-.007	-.053	-.074	-.142	-.097	.019
33½						.104	.049		-.033	-.053				
22½				.183		.156	.057		-.079	-.116	-.102	-.142		
12		.246		.309	.232	.168	.040	-.035	-.117	-.177	-.156	-.147	-.097	
3	.348	.409	.368	.349	.337		.011		-.144		-.139	-.092	-.096	.019
0		.432		.365			.037	-.046		-.170		-.089		.046

TABLE XVII.- PRESSURE COEFFICIENTS FOR CONFIGURATION WITH FORWARD-LOCATED SMALL FLAT-WINDSHIELD CANOPY



(a) M=1.41

ϕ_s, deg \ x/l	-.015	0	.004	.065	.164	.223	.239	.309	.382	.455	.527	.655	.760	.869	.993
α=0.4°; β=0°															
P.L.	.355			.259	.191		.112	.042	-.028	-.082	-.097	.011	.020	-.027	-.036
80	.355				.185			-.079	-.047		-.097				
60	.365				.260		.150	-.076	-.101	-.110		.011			
40	.467			.250	.253		.214	-.033	-.147		-.070		.020		
32				.333											
20		.542				.283	.203		-.197	-.186		.019		-.027	
11							.235								
0			.538				.283	.060	-.198				.016		-.036
α=0.4°; β=-4°															
P.L.	.414			.346	.271		.192	.109	.016	-.049	-.105	-.045	-.007	-.044	-.049
80	.414				.256			.019	-.001		-.105				
60	.433				.489		.252	.033	-.044	-.098		-.045			
40	.491			.337	.358		.291	.028	-.079		-.133		-.007		
32				.375											
20		.530				.303	.257		-.159	-.191		-.022		-.044	
11							.256								
0			.531				.266	.050	-.201				.003		-.049
-11							.195								
-20		.551				.229	.091		-.236	-.237		.014		-.039	
-32				.253											
-40	.437			.070	.132		.112	-.132	-.267		-.051		.011		
-60	.186				.155		.042	-.178	-.179	-.129		.007			
-80	.271				.078			-.174	-.097		-.083				
-P.L.	.272			.161	.115		.034	-.035	-.099	-.147	-.083	.007	.011	-.039	-.045

TABLE XVII.- PRESSURE COEFFICIENTS FOR CONFIGURATION WITH FOV-AFT-LOCATED SMALL FLAP--INBOARD CANOPY - Continued

(a) M=1.41

x/l / β, deg	-.015	0	.004	.065	.161	.223	.339	.359	.382	.455	.527	.645	.760	.869	.993
α=0.4°; β=-8°															
P.L.	.465			.431	.348		.272	.171	.066	-.022	-.105	-.143	-.065	-.092	-.093
80	.465				.393			.204	.038		-.105				
60	.557				.518		.342	.223	-.017	-.097		-.143			
40	.489			.421	.481		.342	.075	-.055		-.170		-.065		
32				.392											
20		.512				.303	.277		-.162	-.203		-.097		-.098	
11							.255								
0			.522				.210	.015	-.211				-.042		-.093
-11							.156								
-20		.557				.177	-.135		-.271	-.334		-.040		-.073	
-32				.178											
-40	.408			-.192	.022		-.013	-.183	-.345		-.091		-.045		
-60	-.010				.023		-.069	-.264	-.269	-.184		-.075			
-80	.171				-.028			-.252	-.173		-.202				
-P.L.	.171			.071	.032		-.034	-.116	-.172	-.230	-.202	-.075	-.045	-.073	-.090
α=6.5°, β=0°															
P.L.	.294			.176	.159		.076	.014	-.060	-.115	-.129	-.030	-.006	-.042	-.036
80	.294				.148			-.055	.004		-.129				
60	.311				.172		.127	-.029	-.115	-.173		-.030			
40	.321			.324	.169		.142	-.055	-.169		-.097		-.006		
32				.255											
20		.424				.170	.125		-.235	-.182		-.013		-.052	
11							.111								
0			.429				.161	-.009	-.215				-.006		-.036
α=6.5°; β=-4°															
P.L.	.321			.253	.223		.142	.066	-.020	-.092	-.175	-.098		-.061	-.060
80	.322			.247	.227			.015			-.175				
60	.337				.242		.210	.056	-.087	-.195		-.098			
40	.301			.379	.256		.185	-.025	-.151		-.211				
32				.293											
20		.405				.185	.165		-.206	-.233		-.052		-.061	
11							.157								
0			.410				.165	-.017	-.215				-.041		-.060
-11							.100								
-20		.421				.132	.025		-.276	-.166		-.026		-.080	
-32				.182											
-40	.295			.154	.089		.053	-.115	-.237		-.073				
-60	.165				.073		.052	-.106	-.157	-.164		-.016			
-80	.235			.130	.065			-.129			-.088				
-P.L.	.235			.127	.098		.028	-.041	-.096	-.235	-.068	-.016		-.080	-.059
α=6.5°, β=-8°															
P.L.	.342			.227	.323		.206	.123	.028	-.060	-.196	-.726	-.056	-.117	-.071
80	.342				.307			.079	.119		-.196				
60	.342				.318		.269	.111	-.077	-.216		-.226			
40	.257			.361	.299		.218	.060	-.170		-.221		-.016		
32				.301											
20		.379				.108	.167		-.215	-.279		-.109		-.117	
11							.150								
0			.390				.229	-.061	-.243				-.117		-.071
-11							.057								
-20		.433				.079	-.193		-.220	-.265		-.117		-.066	
-32				.105											
-40	.295			-.095	-.054		-.082	-.132	-.341		-.121				
-60	-.059				-.054		-.036	-.199	-.212	-.185		-.111			
-80	.157			.029	-.012			-.186			-.219				
-P.L.	.157			.043	.026		-.002	-.170	-.143	-.164	-.219	-.111		-.066	-.067

TABLE XVII.- PRESSURE COEFFICIENTS FOR CONFIGURATION WITH FORWARD-LOCATED SMALL FLAT-WINDSHIELD CANOPY - Continued

(b) M=2.01

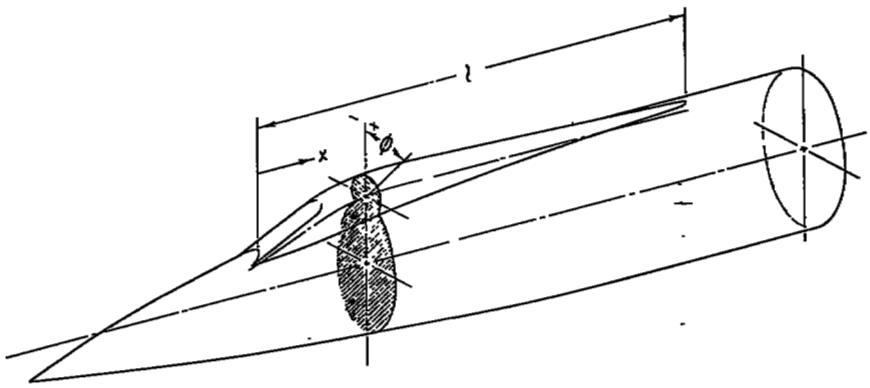
ϕ, deg \ x/l	-.015	0	.004	.065	.164	.223	.239	.309	.382	.455	.527	.655	.760	.869	.993
α=0.4°; β=0°															
P.L.	.276			.176	.148		.085	.067	.013	-.022	-.037	-.004	.035	.008	-.010
80	.276			.179	.130		.070	-.042	.001		-.037				
60				.241	.206		.156	.016	-.076	-.040		-.004			
40	.376			.254	.241			.065	-.080		-.042		.035		
32				.323											
20		.476		.379		.298	.194	.112	-.074	-.125		.024		.008	
11							.259								
0			.545				.308	.117	-.069				.037		-.010
α=0.4°; β=-4°															
P.L.	.337			.243	.224		.154	.134	.070	.017	-.027	-.032	-.005	-.002	-.019
80	.337			.258	.227		.157	.046	.049		-.027				
60				.329	.326		.244	.078	-.004	-.018		-.032			
40	.348			.369	.317			.117	-.042		-.038		-.005		
32				.382											
20		.414		.405		.327	.257	.122	-.062	-.086		-.027		-.002	
11							.282								
0			.533				.305	.114	-.069				.021		-.019
-11							.236								
-20		.510		.359		.266	.093	.085	-.096	-.148		.020		-.001	
-32				.268											
-40	.409			.074	.154			.006	-.123		-.043		.032		
-60				.146	.113		.063	-.051	-.132	-.074		-.026			
-80	.205			.098	.041		-.012	-.110	-.060		-.099				
-P.L.	.205			.106	.080		.024	-.007	-.047	-.078	-.099	-.026	.032	-.001	-.020
α=0.4°; β=-8°															
P.L.	.392			.312	.310		.231	.204	.130	.064	-.011	-.040	-.098	-.031	-.048
80	.392			.331	.329		.253	.142	.107		-.011				
60				.405	.459		.328	.154	.062	-.002		-.040			
40	.336			.438	.393			.169	.004		-.053		-.098		
32				.424											
20		.349		.426		.350	.300	.148	-.064	-.085		-.123		-.031	
11							.304								
0			.492				.308	.054	-.092				-.028		-.048
-11							.232								
-20		.525		.365		.255	-.039	.011	-.119	-.169		-.043		-.045	
-32				.253											
-40	.433			-.113	-.051			-.048	-.166		-.064		-.023		
-60				.060	.024		-.020	-.119	-.155	-.118		-.018			
-80	.091			.024	-.046		-.099	-.145	-.135		-.168				
-P.L.	.091			.045	.015		-.039	-.091	-.118	-.153	-.168	-.018	-.023	-.045	-.055

TABLE XVII.- PRESSURE COEFFICIENTS FOR CONFIGURATION WITH FORWARD-LOCATED SMALL FLAT-WINDSHIELD CANOPY - Concluded

(b) M=2.01

ϕ, deg \ x/l	-.015	0	.004	.065	.164	.223	.239	.309	.382	.455	.527	.655	.760	.869	.993
$\alpha=6.5°;\ \beta=0°$															
P.L.	.237			.140			.066	.045	-.007	-.050	-.087	-.024	.007	-.012	-.018
80	.237			.153	.134		.074	-.011	-.024		-.087				
60				.200	.164		.136	-.004	-.060	-.076		-.024			
40	.257			.223	.179			.024	-.101		-.076		.007		
32				.259											
20		.341		.270		.192	.118	.040	-.114	-.122		-.001		-.012	
11							.156								
0			.409				.198	.034	-.114				.009		-.015
$\alpha=6.5°;\ \beta=-4°$															
P.L.	.291			.185			.122	.092	.036	-.022	-.097	-.104	-.023	-.034	-.042
80	.291			.203	.197		.137	.051	.008		-.097				
60				.255	.253		.187	.047	-.032	-.087		-.104			
40	.228			.292	.230			.053	-.075		-.104		-.023		
32				.317											
20		.274		.287		.210	.161	.037	-.112	-.126		-.047		-.034	
11							.174								
0			.379				.191	.022	-.122				-.033		-.042
-11							.135								
-20		.375		.248		.160	.019	.010	-.141	-.164		-.014		-.057	
-32				.194											
-40	.284			.089	.098			-.028	-.145		-.062		-.023		
-60				.122	.083		.054	-.064	-.115	-.094		-.010			
-80	.161			.092	.059		-.001	-.079	-.060		-.087				
-P.L.	.161			.089			.016	-.006	-.046	-.076	-.087	-.010	-.023	-.057	-.038
$\alpha=6.5°;\ \beta=-8°$															
P.L.	.344			.242			.189	.152	.082	.010	-.079	-.117	-.048	-.064	-.067
80	.344			.252	.273		.212	.120	.050		-.079				
60				.300	.337		.257	.102	.001	-.075		-.117			
40	.199			.337	.283			.082	-.050		-.140		-.048		
32				.329											
20		.202		.302		.218	.185	.055	-.120	-.151		-.116		-.064	
11							.186								
0			.330				.186	-.032	-.149				-.093		-.067
-11							.129								
-20		.372		.238		.140	-.176	-.082	-.174	-.195		-.112		-.070	
-32				.146											
-40	.304			-.091	-.082			-.093	-.193		-.095		-.148		
-60				.046	.002		-.027	-.126	-.164	-.150		-.110			
-80	.047			.029	-.011		-.066	-.128	-.114		-.118				
-P.L.	.047			.036			-.033	-.059	-.088	-.109	-.118	-.110	-.148	-.070	-.078

TABLE XVIII.- PRESSURE COEFFICIENTS FOR CONFIGURATION WITH REARWARD-LOCATED SMALL FLAT-WINDSHIELD CANOPY



(a) M=1.41

x/l / ϕ, deg	-.011	0	.004	.052	.102	.242	.149	.193	.249	.324	.467	.662	.804	.985
α=0.4°; β=0°														
P.L.	.298		.285	.152	.121	.071		-.005	-.031	-.060	-.111	-.060	-.066	-.022
50				.152				-.038		-.068	-.111			
60	.298			.159	.120	.073			-.108		-.104	-.060		
48			.356											
43	.388			.242	.166	.105				-.153	-.054		-.066	
40			.447											
32				.326										
29						.148								
26					.271									
20		.516		.338		.216	.100		-.072	-.202	-.078	-.060		
0			.529	.354	.308		.225	.039	-.049	-.224	-.063	-.060	-.044	-.022
α=0.4°; β=-4°														
P.L.	.333		.337	.245	.211	.150		.058	.032	-.017	-.147	-.093	-.098	-.042
50				.245				.050		-.028	-.147			
60	.333			.265	.224	.173			-.031		-.173	-.093		
48			.408											
43	.373			.336	.265	.201				-.126	-.197		-.096	
40			.450											
32				.368										
29						.238								
26					.318									
20		.488		.351		.263	.180		-.056	-.197	-.135	-.068		
0			.514	.366	.305		.227	.049	-.126	-.239	-.099	-.064	-.068	-.042
-20		.515		.334		.150	-.034		-.122	-.278	-.086	-.063		
-26					.191									
-29						-.006								
-32				.262										
-40			.467											
-43	.370			.096	.017	-.031				-.216	-.080		-.088	
-48			.242											
-60	.229			.024	-.015	-.054			-.223		-.080	-.071		
-80				.046				-.133		-.119	-.082			
-P.L.	.229		.201	.045	.022	-.012		-.062	-.100	-.121	-.082	-.071	-.088	-.037

TABLE VIII.- PRESSURE COEFFICIENTS FOR CONFIGURATION WITH REARWARD-LOCATED SMALL FLAP-WIDE-CHORD CANARD - Continued

(a) M=1.41

x/l / β, deg	-.021	0	.004	.029	.132	.312	.549	.193	.249	.472	.667	.862	.804	.955
α=0.4° ; β=-8°														
P.L.	.355		.379	.336	.307	.236		.178	.106	.034	-.140	-.132	-.134	-.089
80				.336				.143		.014	-.140			
60	.355			.357	.128	.283			.044		-.157	-.132		
48			.116											
43	.336			.392	.348	.276				-.115	-.267		-.144	
40			.403											
32				.391										
29						.257								
26					.342									
20		.431		.360		.290	.225		-.051	-.218	-.337	-.314		
0			.452	.328	.295		.223	.024	-.123	-.288	-.172	-.210	-.111	-.089
-20		.495		.284		.096	-.152		-.180	-.377	-.350	-.127		
-26					.121									
-29						-.735								
-32				.290										
-40			.354											
-43	.326			-.032	-.155	-.211				-.313	-.167		-.128	
-48			.086											
-60	.128			-.128	-.183	-.197			-.268		-.202	-.236		
-80				-.062				-.212		-.191	-.134			
-P.L.	.128		.098	-.062	-.073	-.101		-.166	-.191	-.217	-.111	-.238	-.128	-.074
α=6.5° , β=0°														
P.L.	.227		.220	.125	.104	.060		-.029	-.096	-.086	-.163	-.140	-.070	-.011
80				.125				-.026		-.096	-.163			
60	.227			.130	.103	.062			-.107			-.140		
48			.260											
43	.290			.195	.123	.077				-.179	-.123		-.070	
40			.340											
32				.246										
29						.102								
26					.154									
20		.392		.252		.112	.045		-.095	-.228	-.386	-.054		
0			.405	.261	.214		.139	.012	-.149	-.236	-.077	-.050	-.039	-.014
α=6.5° ; β=-4°														
P.L.	.246		.260	.203	.185	.132		.037	.009	-.042	-.205	-.253	-.093	-.027
80				.203				.019		-.072	-.205			
60	.216			.223	.186	.143			-.054			-.253		
48			.314											
43	.268			.264	.199	.151				-.179	-.262		-.093	
40			.332											
32				.278										
29						.167								
26					.233									
20		.370		.269		.152	.110		-.065	-.214	-.152	-.087		
0			.395	.257	.211		.160	-.032	-.167	-.271	-.111	-.128	-.047	-.027
-20		.395		.227		.074	-.075		-.235	-.256	-.098	-.091		
-26					.229									
-29						-.033								
-32				.187										
-40			.313											
-43	.278			.065	-.000	-.036				-.204	-.134		-.095	
-48			.195											
-60	.176			.022	-.006	-.039			-.182			-.098		
-80				.036				-.106		-.129	-.048			
-P.L.	.176		.155	.036	.015	-.023		-.082	-.103	-.121	-.098	-.091	-.095	-.028

TABLE XVIII - PRESSURE COEFFICIENTS FOR CONFIGURATION WITH REARWARD-LOCATED SMALL FLAT-WINDSHIELD CANOPY - Continued

(a) M=1.41

x/l / β, deg	-.011	0	.004	.052	.102	.142	.189	.193	.249	.324	.447	.662	.804	.985
α=6.5°; β=-8°														
F.L.	.251		.228	.277	.273	.210		.095	.070	.007	-.296	-.276	-.120	-.053
80				.277				.125		-.032	-.198			
60	.751			.293	.260	.212			.004			-.276		
46			.305											
43	.213			.294	.248	.204				-.197	-.372		-.120	
40			.268											
32				.285										
29						.191								
25					.243									
20		.212		.254		.196	.135		-.099	-.299	-.264	-.151		
0			.362	.245	.202		.129	-.066	-.234	-.318	-.242	-.172	-.074	-.053
-20		.370		.202		.010	-.204		-.297	-.186	-.211	-.245		
-26					.042									
-29						-.266								
-32				.123										
-40			.271											
-43	.212			-.102	-.163	-.180				-.251	-.174		-.149	
-46			.069											
-60	.096			-.109	-.135	-.157			-.282			-.242		
-80				-.053				-.179		-.178	-.073			
F.L.	.096		.071	-.053	-.064	-.087		-.150	-.169	-.172	-.073	-.242	-.249	-.047

(b) M=2.01

α=0.4°, β=0°

F.L.	.229		.222	.142	.122	.089		.045	.022	-.001	-.047	-.064	-.030	-.010
80				.142				.007		-.007	-.047			
60	.229			.172	.123	.102			-.049		-.030	-.064		
46			.284											
43	.318			.258	.191	.134				-.081	-.063		-.030	
40			.372											
32				.354										
29						.170								
26					.293									
20		.249		.375		.253	.144		-.022	-.112	-.038	-.015		
0			.499	.390	.338		.204	.114	.005	-.114	-.027	-.012	-.019	-.010
α=0.4°; β=-4°														
F.L.	.270		.282	.218	.204	.159		.151	.076	.049	-.063	-.076	-.047	-.029
80				.218				.083		.035	-.063			
60	.270			.261	.220	.174			.029		-.074	-.076		
46			.330											
43	.321			.334	.287	.224				-.044	-.096		-.047	
40			.364											
32				.389										
29						.252								
26					.326									
20		.406		.390		.294	.215		-.029	-.100	-.111	-.044		
0			.474	.390	.340		.306	.121	-.007	-.123	-.073	-.037	-.041	-.029
-20		.457		.351		.209	.061		-.047	-.150	-.056	-.040		
-26					.237									
-29						.050								
-32				.257										
-40			.355											
-43	.287			.240	.074	.015				-.154	-.054		-.056	
-46			.295											
-60	.364			.061	.006	-.009			-.135		-.052	-.061		
-80				.056				-.073		-.063	-.071			
F.L.	.164		.145	.056	.039	.019		-.023	-.044	-.062	-.071	-.061	-.056	-.032

TABLE XVIII.- PRESSURE COEFFICIENTS FOR CONFIGURATION WITH REARWARD-LOCATED SMALL FLAT-WINDSHIELD CANOPY - Continued

(b) M=2.01

ϕ, deg \ x/l	-.011	0	.004	.052	.102	.142	.149	.193	.249	.324	.467	.662	.804	.905
α=04°;β=-8°														
P.L.	.301		.334	.286	.280	.235		.165	.136	.105	-.039	-.076	-.091	-.083
88				.286				.162		.088	-.039			
60	.301			.323	.302	.277			.103		-.116	-.076		
48			.368											
43	.306			.371	.359	.297				-.016	-.116		-.091	
40			.334											
32				.359										
29						.309								
26					.371									
20		.347		.393		.326	.263		-.012	-.094	-.166	-.105		
0			.417	.380	.341		.308	.135	-.031	-.143	-.163	-.097	-.076	-.083
-20		.442		.341		.293	.030		-.082	-.384	-.118	-.102		
-26					.207									
-29						-.093								
-32				.260										
-40			.343											
-43	.252			.004	-.030	-.071				-.185	-.109		-.103	
-48			.094											
-60	.094			-.035	-.102	-.128			-.193		-.112	-.142		
-88				-.020				-.130		-.169	-.091			
-P.L.	.094		.072	-.020	-.036	-.049		-.087	-.116	-.127	-.091	-.141	-.103	-.076
α=6.5°,β=0°														
P.L.	.161		.164	.108	.094	.062		.018	-.007	-.026	-.109	-.116	-.052	-.010
80				.108				-.003		-.037	-.109			
60	.161			.133	.095	.077			-.053		-.052	-.116		
48			.211											
43	.218			.194	.140	.093				-.101	-.102		-.052	
40			.267											
32				.256										
29						.110								
26					.200									
20		.325		.268		.153	.079		.002	-.137	-.062	-.038		
0			.362	.280	.229		.197	.035	-.061	-.151	-.049	-.033	-.028	-.010
α=6.5°;β=-4°														
P.L.	.187		.211	.168	.162	.126		.073	.042	.019	-.094	-.136	-.072	-.023
88				.162				.060		.002	-.094			
60	.187			.201	.175	.153			.009		-.082	-.136		
48			.215											
43	.210			.251	.217	.166				-.083	-.164		-.072	
40			.247											
32				.222										
29						.160								
26					.240									
20		.284		.276		.199	.111		-.005	-.110	-.152	-.082		
0			.341	.277	.226		.197	.011	-.076	-.163	-.083	-.107	-.058	-.023
-20		.336		.255		.123	.005		-.013	-.167	-.066	-.071		
-26					.151									
-29						.002								
-32				.212										
-40			.261											
-43	.205			.100	.042	.001				-.133	-.067		-.058	
-48			.119											
-60	.120			.047	.008	-.006			-.123		-.044	-.075		
-80				.042				-.065		-.071	-.094			
P.L.	.130		.108	.042	.025	.005		-.033	-.053	-.065	-.094	-.075	-.058	-.023

TABLE XVIII.- PRESSURE COEFFICIENTS FOR CONFIGURATION WITH REARWARD-LOCATED SMALL FLAT-WINDSHIELD CANOPY - Concluded

(b) M=2.01

ϕ, deg \ x/l	-.011	0	.004	.052	.102	.142	.149	.193	.249	.324	.467	.662	.804	.985
α=6.5°; β =-8°														
P.L.	.200		.247	.224	.228	.188		.126	.091	.066	-.066	-.124	-.107	-.046
80				.224				.128		.043	-.066			
68	.200			.242	.232	.214			.058		-.125	-.124		
48			.258											
43	.181			.256	.264	.215				-.063	-.177		-.107	
40			.200											
32				.271										
29						.207								
26					.255									
20		.223		.275		.218	.172		.002	-.139	-.187	-.106		
0			.286	.274	.231		.199	.055	-.096	-.190	-.170	-.145	-.078	-.046
-20		.307		.234		.101	-.031		-.047	-.212	-.164	-.176		
-26					.120									
-29						-.143								
-32				.171										
-40			.241											
-43	.165			-.042	-.079	-.109				-.194	-.181		-.095	
-48			.050											
-60	.047			-.057	-.105	-.119			-.187		-.113	-.113		
-80				-.035				-.119		-.114	-.079			
-P.L.	.047		.037	-.035	-.043	-.055		-.088	-.107	-.112	-.079	-.113	-.095	-.046

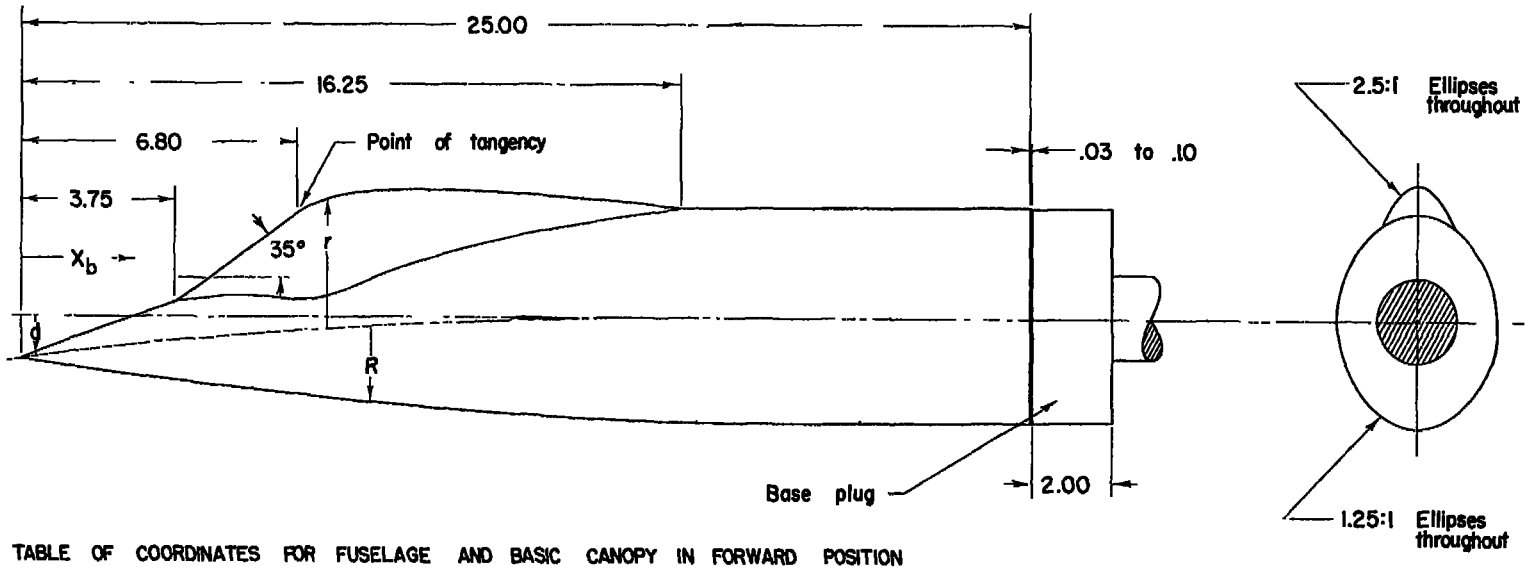


TABLE OF COORDINATES FOR FUSELAGE AND BASIC CANOPY IN FORWARD POSITION

Fuselage Station X_b	Droop d	Fuselage Major radius R	Canopy Major radius r	X_b	d	R	r
.000	1.000	.000		10.000	.183	2.049	3.148
1.500	.837	.418		11.250	.127	2.187	3.077
2.500	.735	.674		12.500	.081	2.300	2.961
3.750	.617	.969	.969	13.750	.046	2.388	2.811
5.000	.510	1.237	1.737	15.000	.020	2.450	2.655
6.250	.413	1.479	2.516	16.250	.005	2.480	2.480
7.500	.326	1.695	3.096	17.500	.000	2.500	
8.750	.250	1.885	3.175	25.000	.000	2.500	

Figure 1.- Details of canopy-fuselage model showing round-windshield canopy in the forward location. All dimensions are in inches.

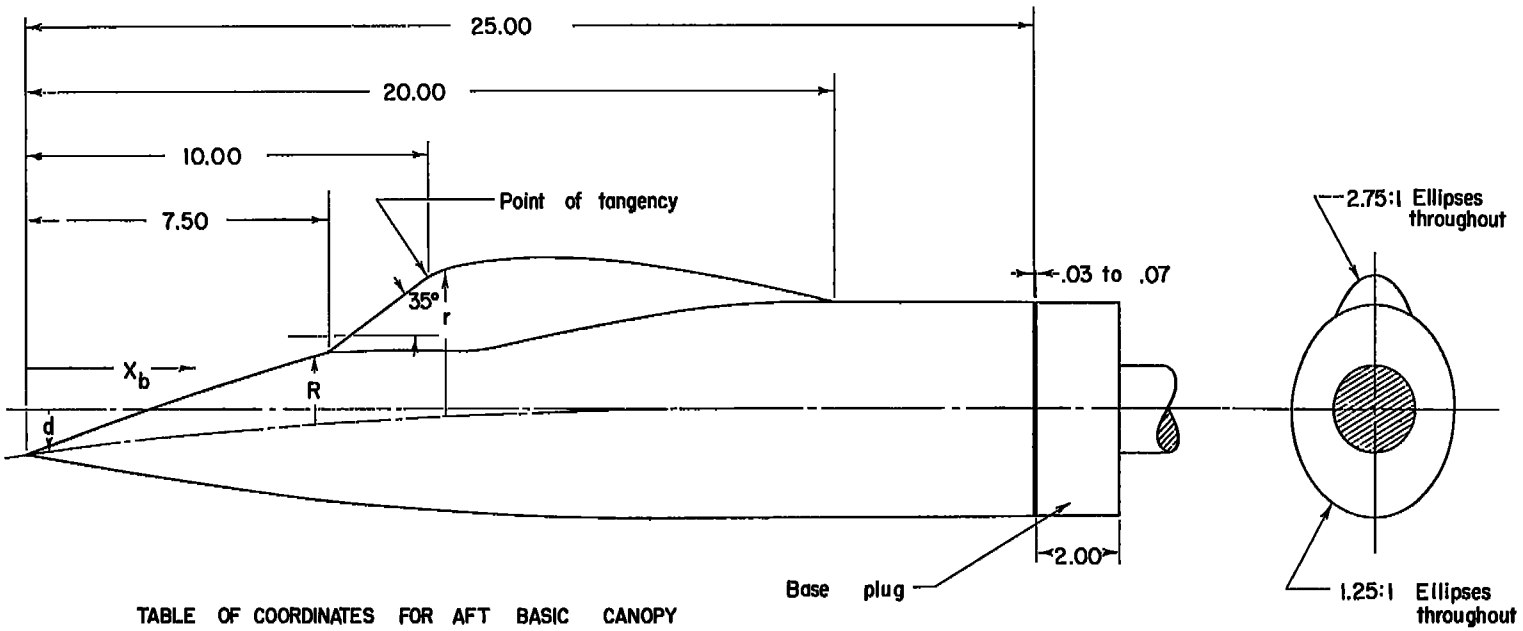
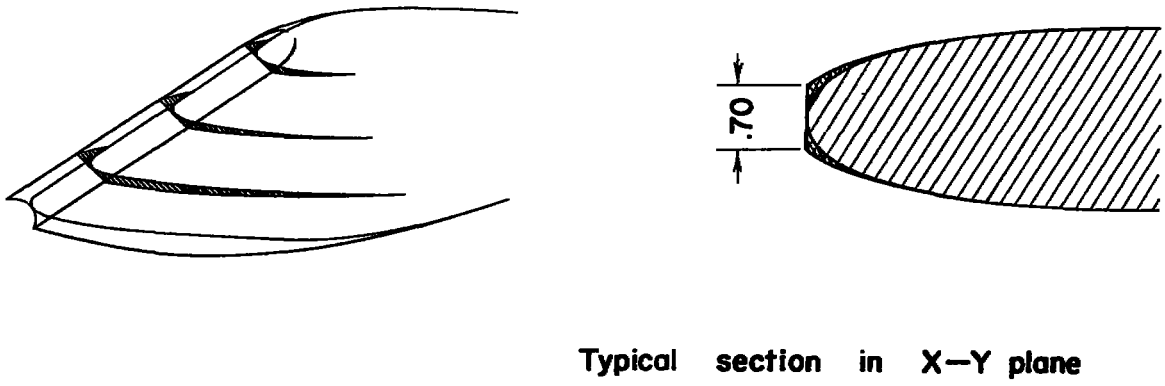


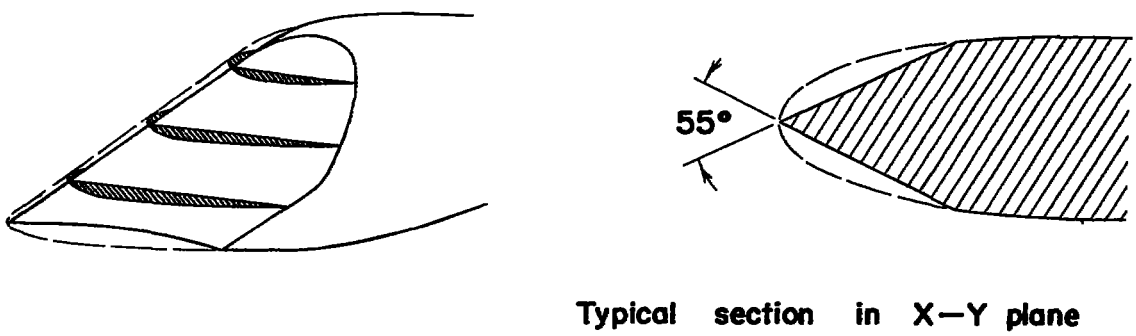
TABLE OF COORDINATES FOR AFT BASIC CANOPY

Fuselage Station, X_b	Droop d	Fuselage Major radius R	Canopy Major radius r	X_b	d	R	r
.000	1.000	.000		12.500	.081	2.300	3.609
1.500	.837	.418		13.750	.046	2.388	3.511
2.500	.735	.674		15.000	.020	2.450	3.370
3.750	.617	.969		16.250	.005	2.480	3.180
5.000	.510	1.237		17.500	.000	2.500	2.970
6.250	.413	1.479		18.750	.000	2.500	2.750
7.500	.326	1.695	1.695	20.000	.000	2.500	2.500
8.750	.250	1.885	2.494	25.000	.000	2.500	
10.000	.183	2.049	3.302				
11.250	.127	2.187	3.602				

Figure 2.- Details of canopy-fuselage model showing round-windshield canopy in the rearward location. All dimensions are in inches.



(a) Method of development of flat-faced canopies from basic or round-faced canopies.



(b) Method of development of vee-faced canopies from basic or round-faced canopies.

Figure 3.- Method of development of flat and vee-windshield canopies from the basic or round-windshield canopy. All dimensions are in inches.

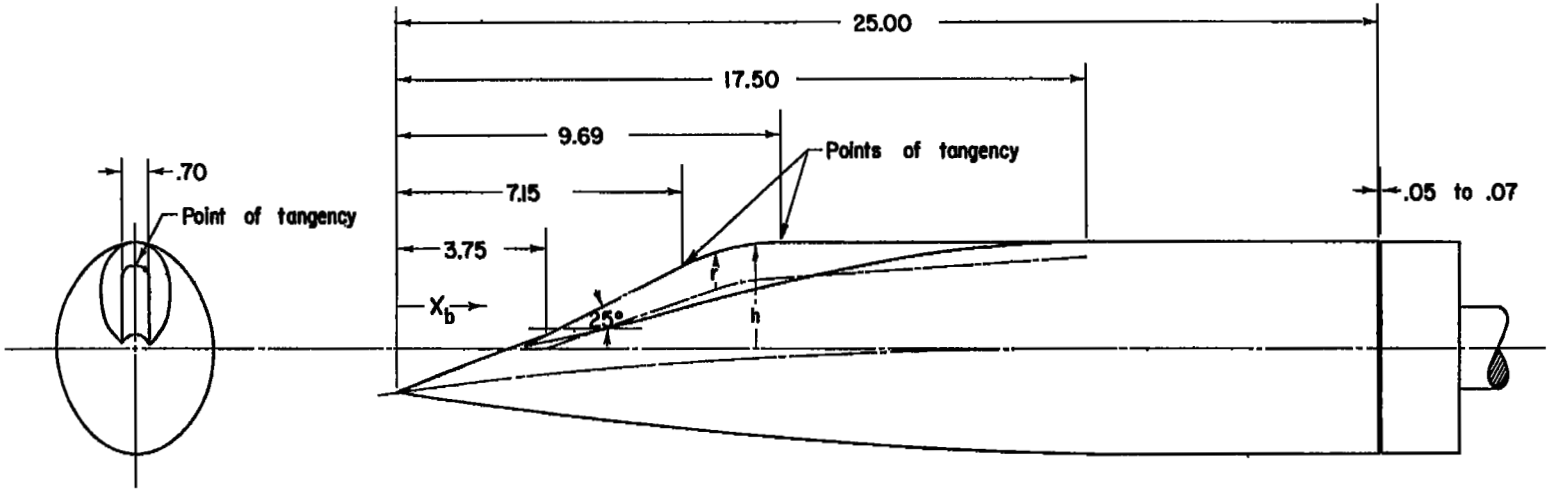


TABLE OF DIMENSIONS FOR SMALL CANOPY IN FORWARD POSITION

Fuselage Station X_b	Canopy Profile h	Canopy Radius r	Fuselage Station X_b	Canopy Profile h	Canopy Radius r
3.750	.325	.352	11.250	2.500	.733
5.000	.935	.529	12.500	2.500	.657
6.250	1.518	.706	13.750	2.500	.581
7.500	2.088	.870	15.000	2.500	.504
8.750	2.427	.849	16.250	2.500	.428
10.000	2.500	.809	17.500	2.500	.352

Note:
Dimensions from table describe a round-faced canopy. Flat-faced configuration results from addition of the flat face and filling to fair to basic shape in a manner similar to that shown in figure 3

Figure 4.- Details of canopy-fuselage model showing small forward-located flat-windshield canopy. All dimensions are in inches.

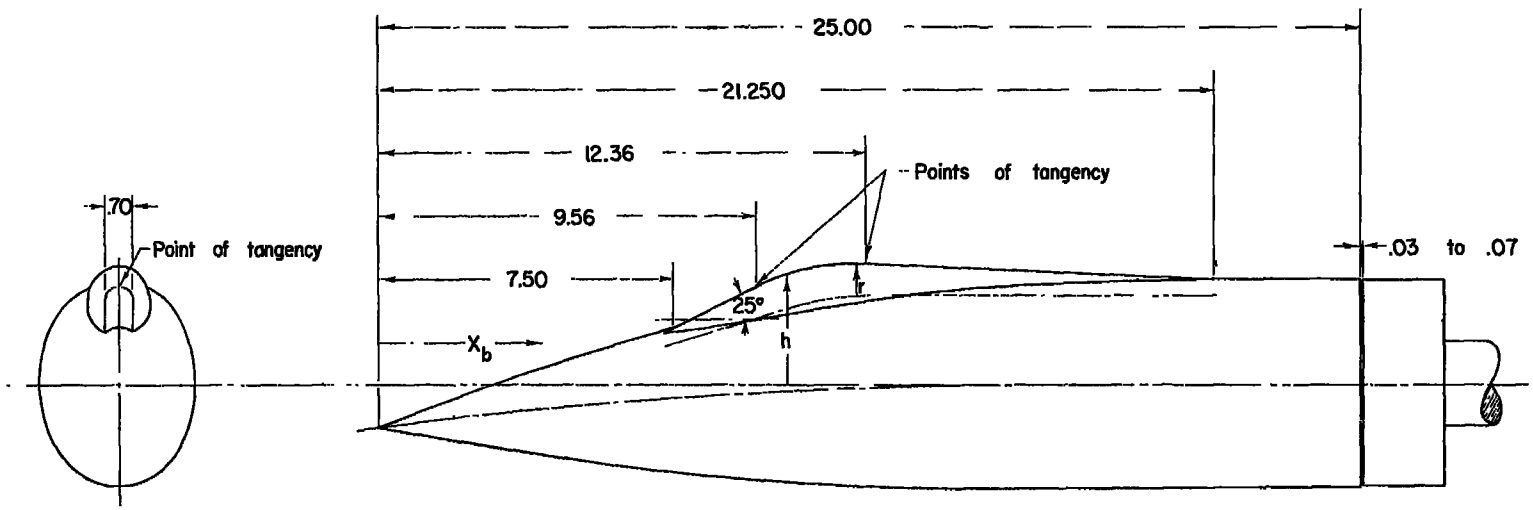
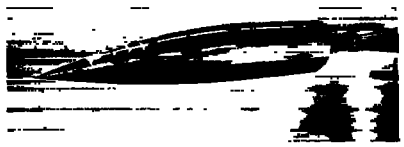


TABLE OF DIMENSIONS FOR SMALL CANOPY IN AFT POSITION

Fuselage Station X_b	Canopy Profile h	Canopy Radius r	Fuselage Station X_b	Canopy Profile h	Canopy Radius r
7.500	1.395	.390	15.000	2.773	.629
8.750	1.952	.592	16.250	2.718	.574
10.000	2.514	.772	17.500	2.664	.520
11.250	2.833	.758	19.375	2.582	.438
12.500	2.882	.738	21.250	2.500	.356
13.750	2.827	.683			

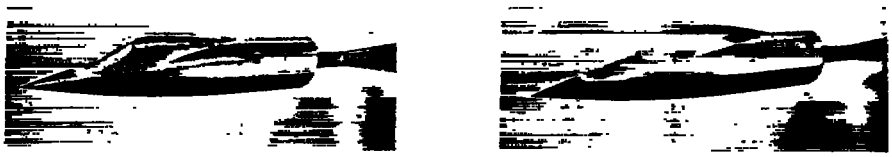
Note:
Dimensions from table describe a round-faced canopy. Flat-faced configuration results from addition of the flat face and filling to fair to the basic shape in a manner similar to that shown in figure 3

Figure 5.- Details of canopy-fuselage model showing small rearward-located flat-windshield canopy. All dimensions are in inches.

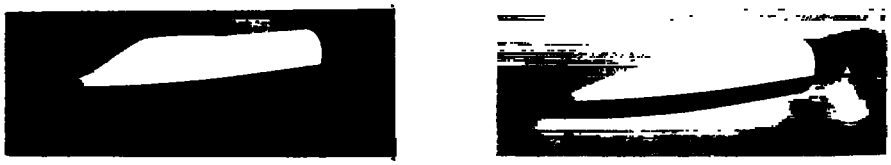


(a) Body alone.

Forward-located canopies Rearward-located canopies



(b) Large flat-windshield configurations.



(c) Large vee-windshield configurations.

(d) Large round-windshield configurations.

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(e) Small flat-windshield configurations.

Figure 6.- Photographs of models.

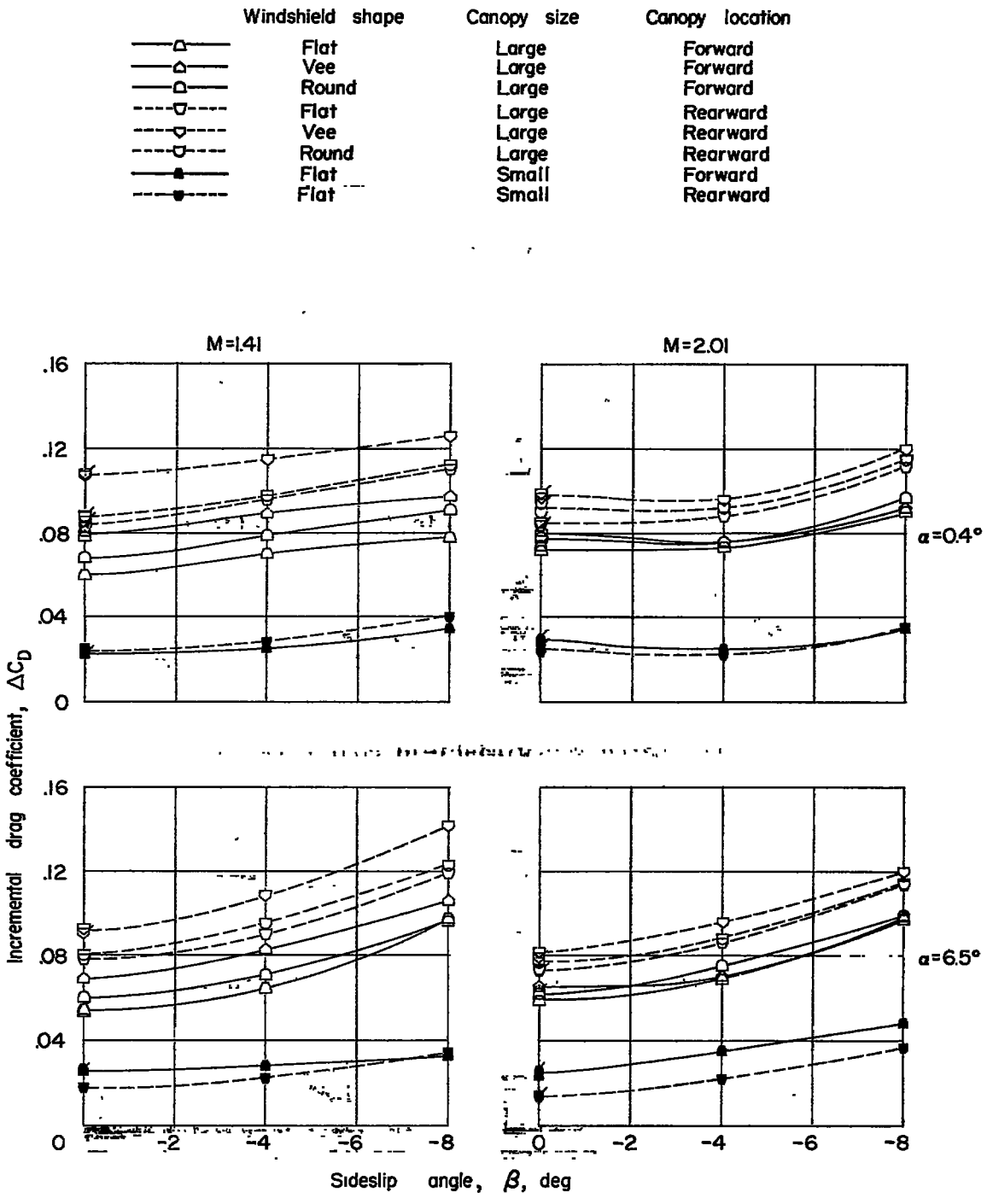


Figure 7.- Incremental drag coefficients for the several canopy configurations at various angles of sideslip for M = 1.41 and 2.01 and $\alpha = 0.4^\circ$ and 6.5°. Tailed symbols are check points.

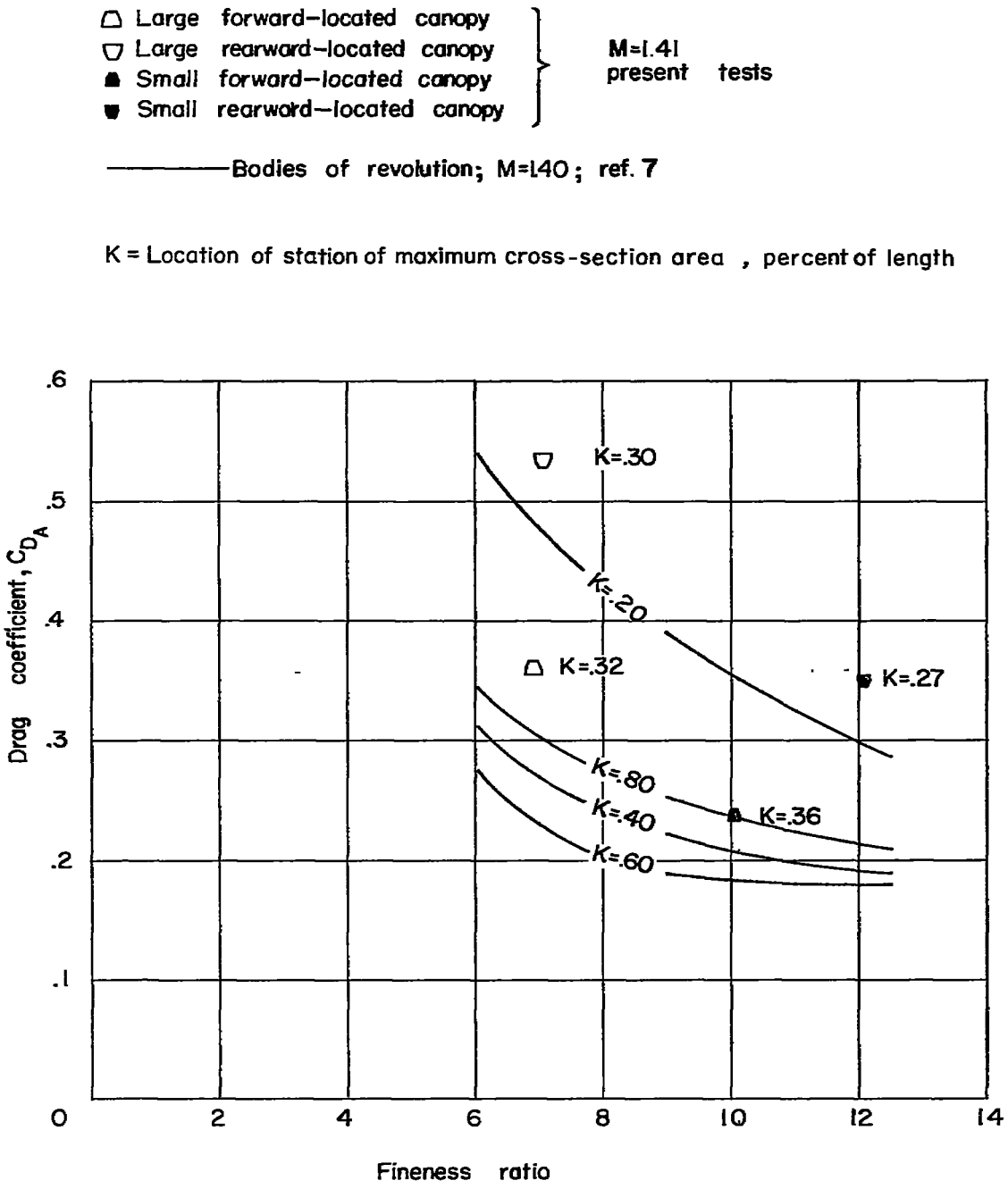
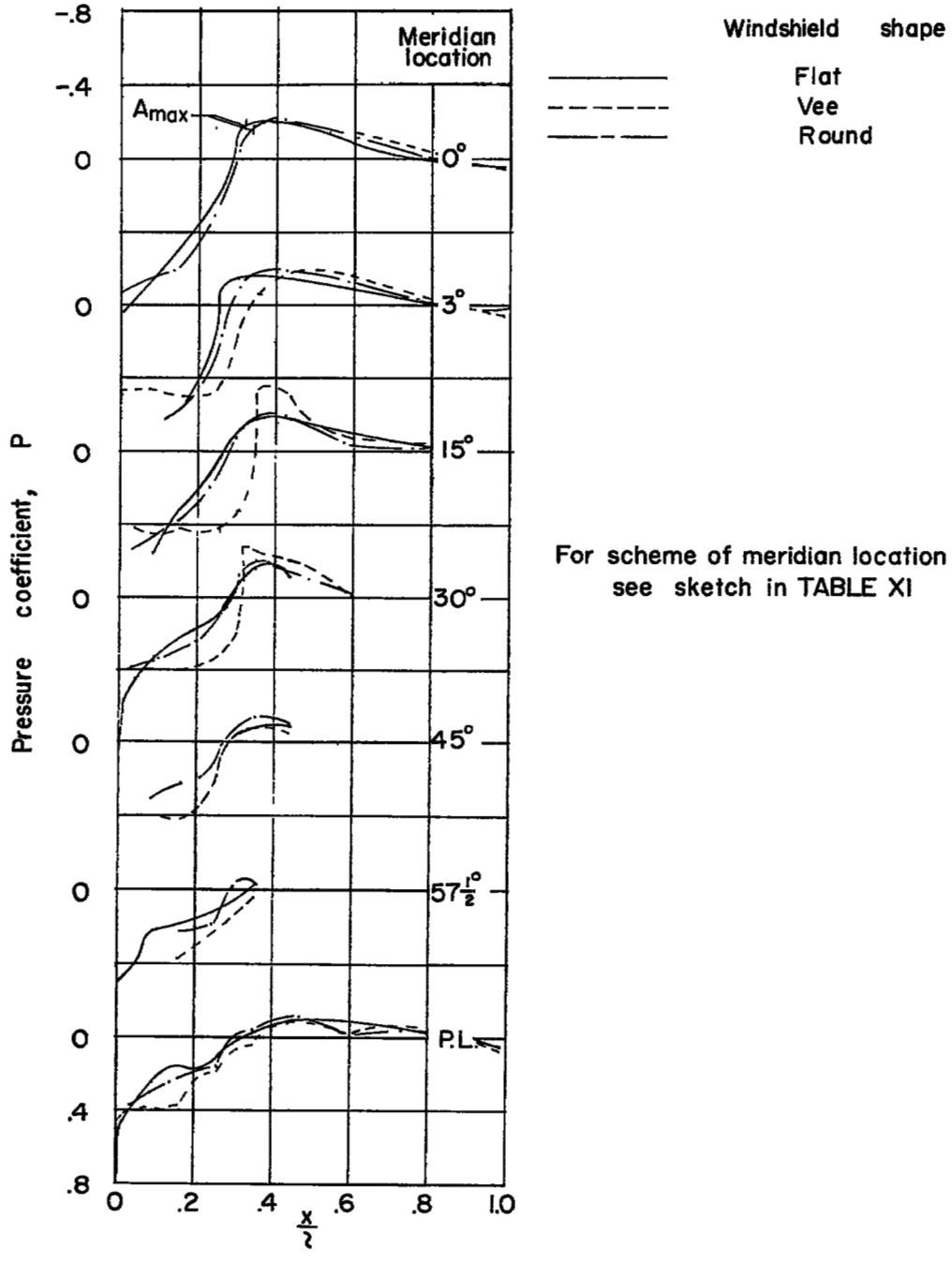
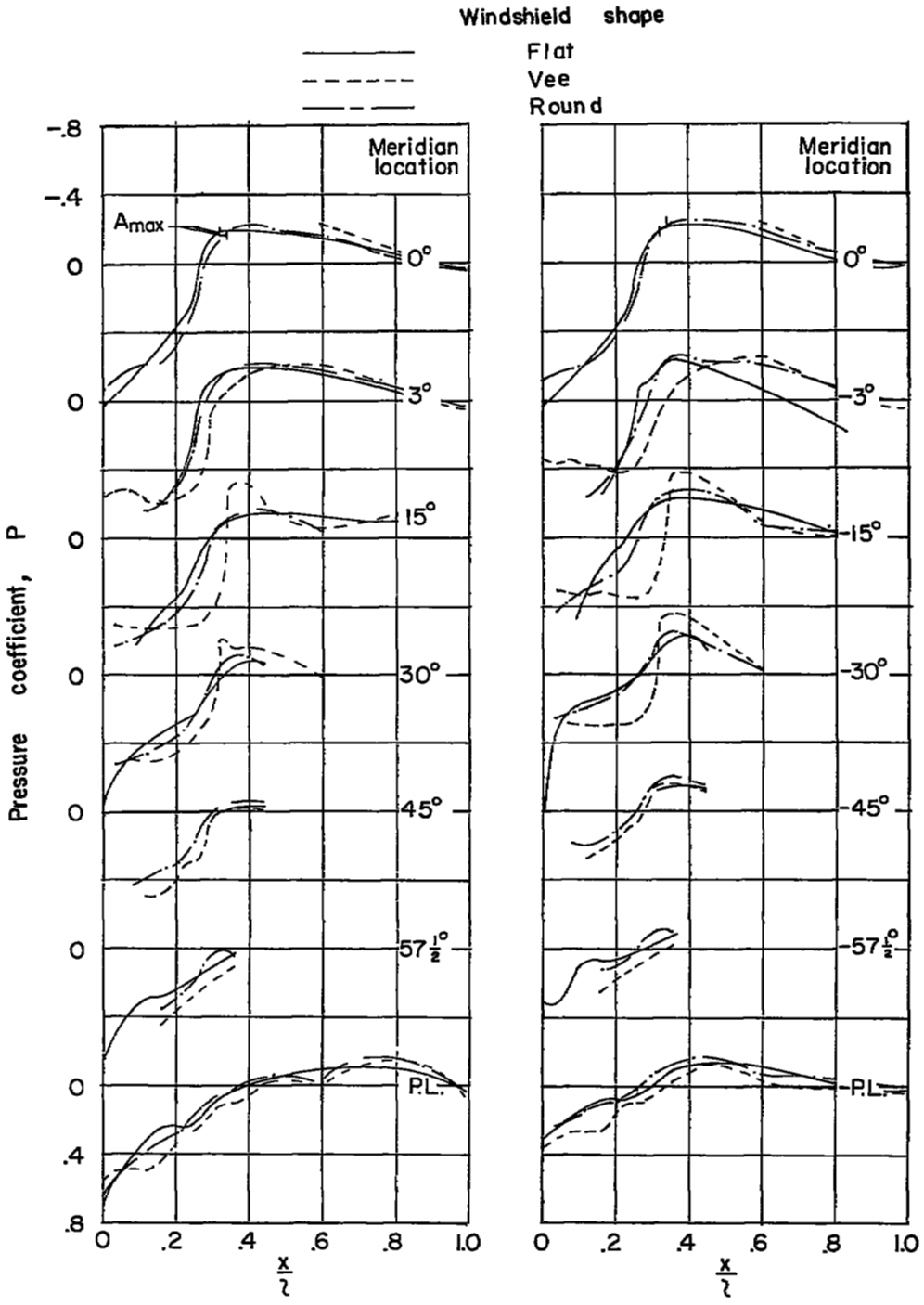


Figure 8.- Incremental drag coefficient C_{D_A} (based on canopy maximum cross-section area) for flat-windshield canopies compared with drag coefficients C_{D_A} for bodies of revolution having various locations of maximum diameter (ref. 7).



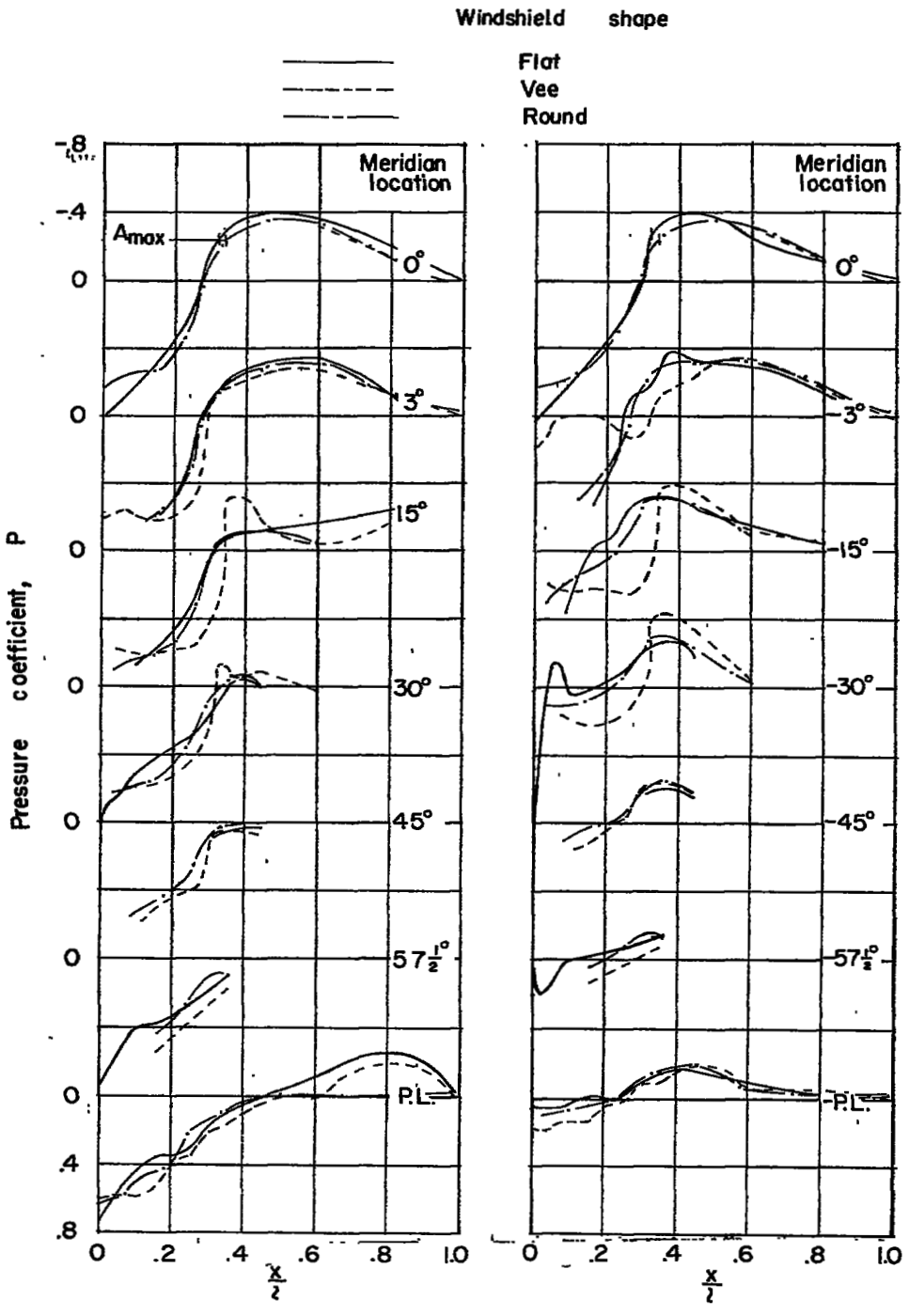
(a) $\alpha = 0.4^{\circ}$; $\beta = 0^{\circ}$.

Figure 9.- Effect of windshield shape on pressure-coefficient distributions on large forward-located canopies at M = 1.41.



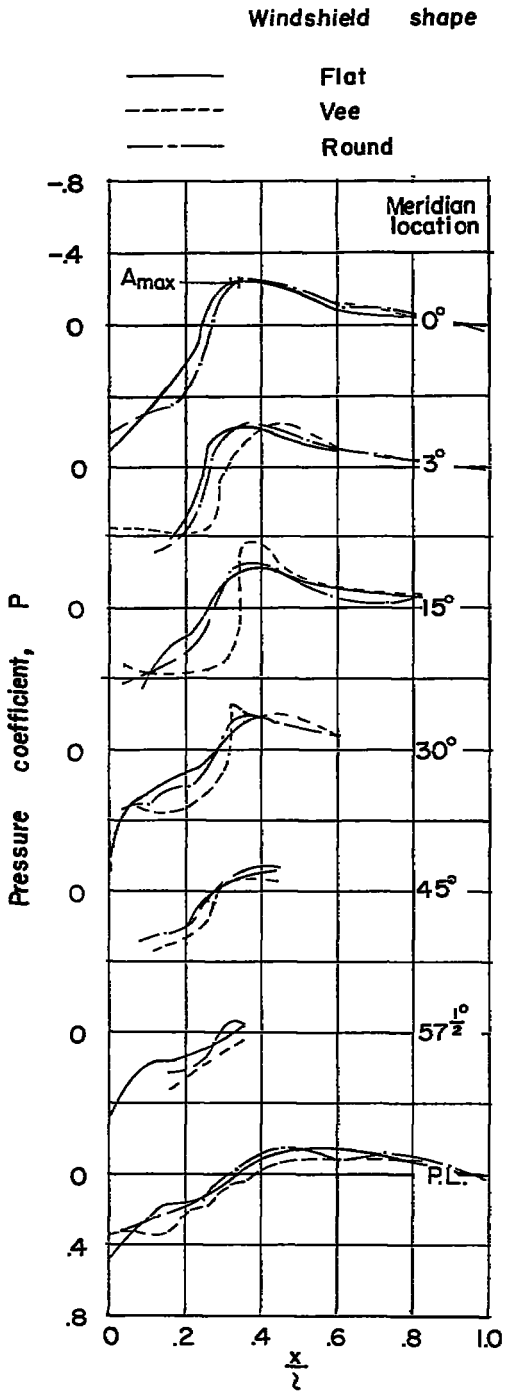
(b) $\alpha = 0.4^{\circ}$; $\beta = -4^{\circ}$.

Figure 9.- Continued.



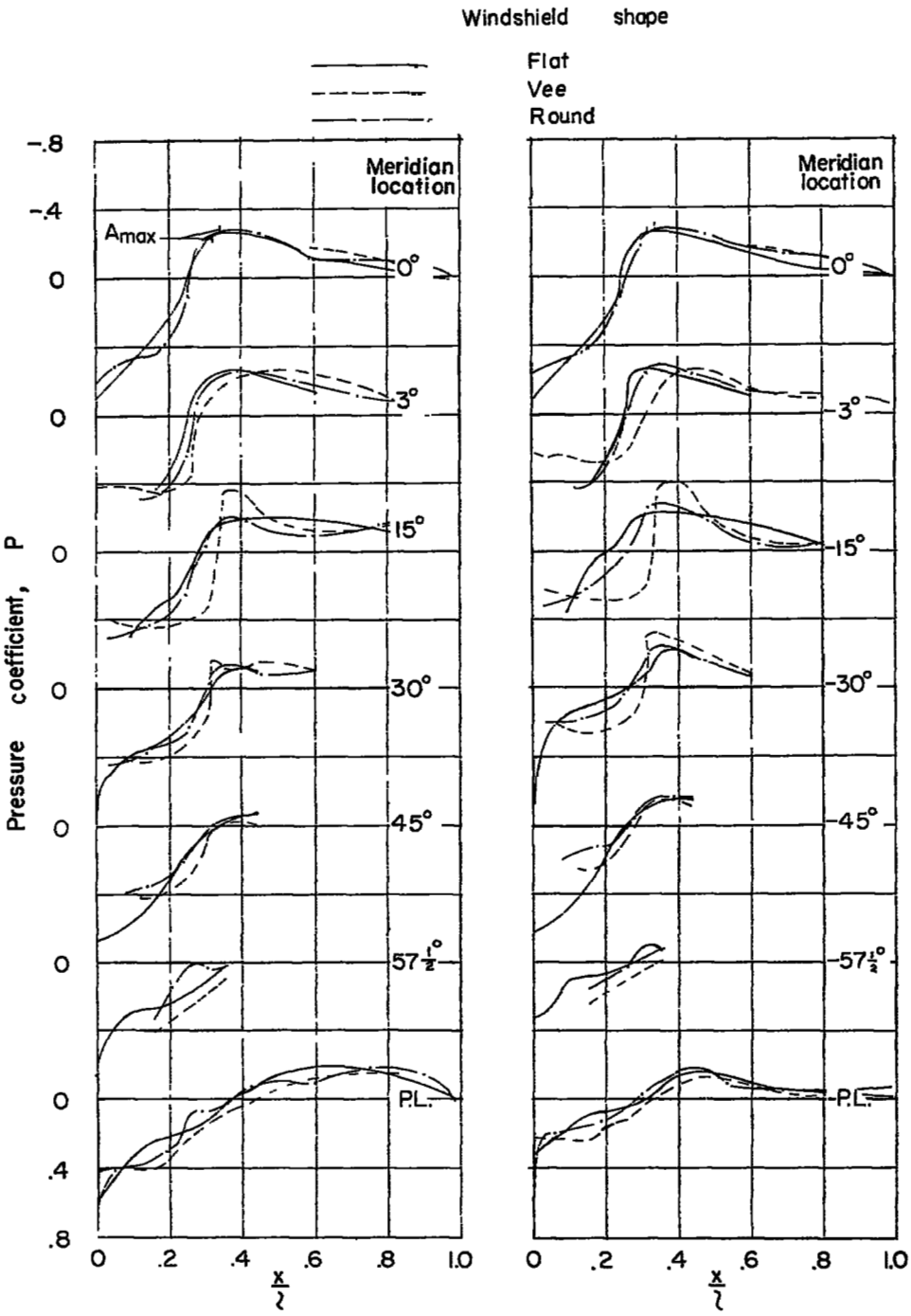
(c) $\alpha = 0.4^{\circ}$; $\beta = -8^{\circ}$.

Figure 9.- Continued.



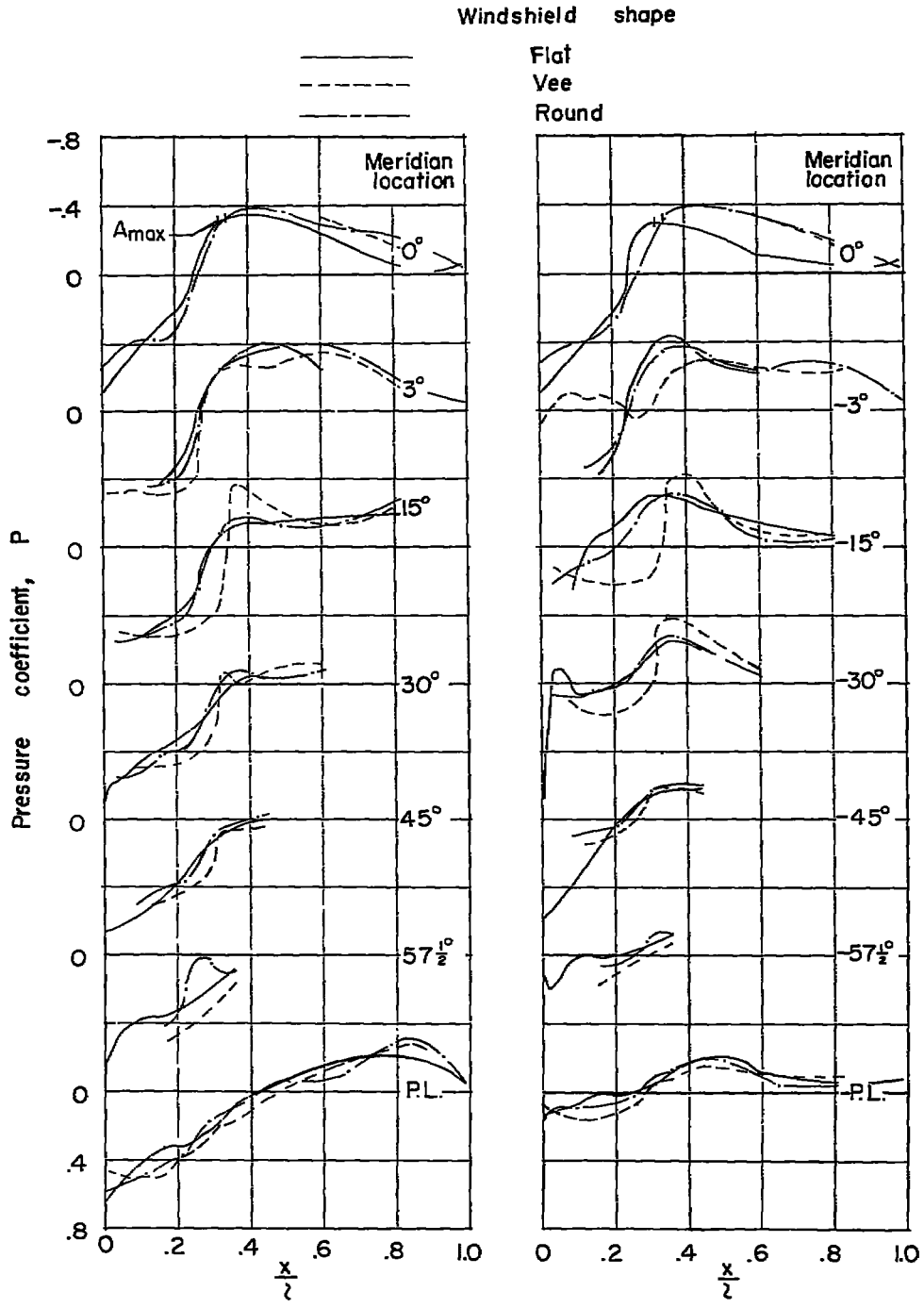
(d) $\alpha = 6.5°$; $\beta = 0°$.

Figure 9.- Continued.



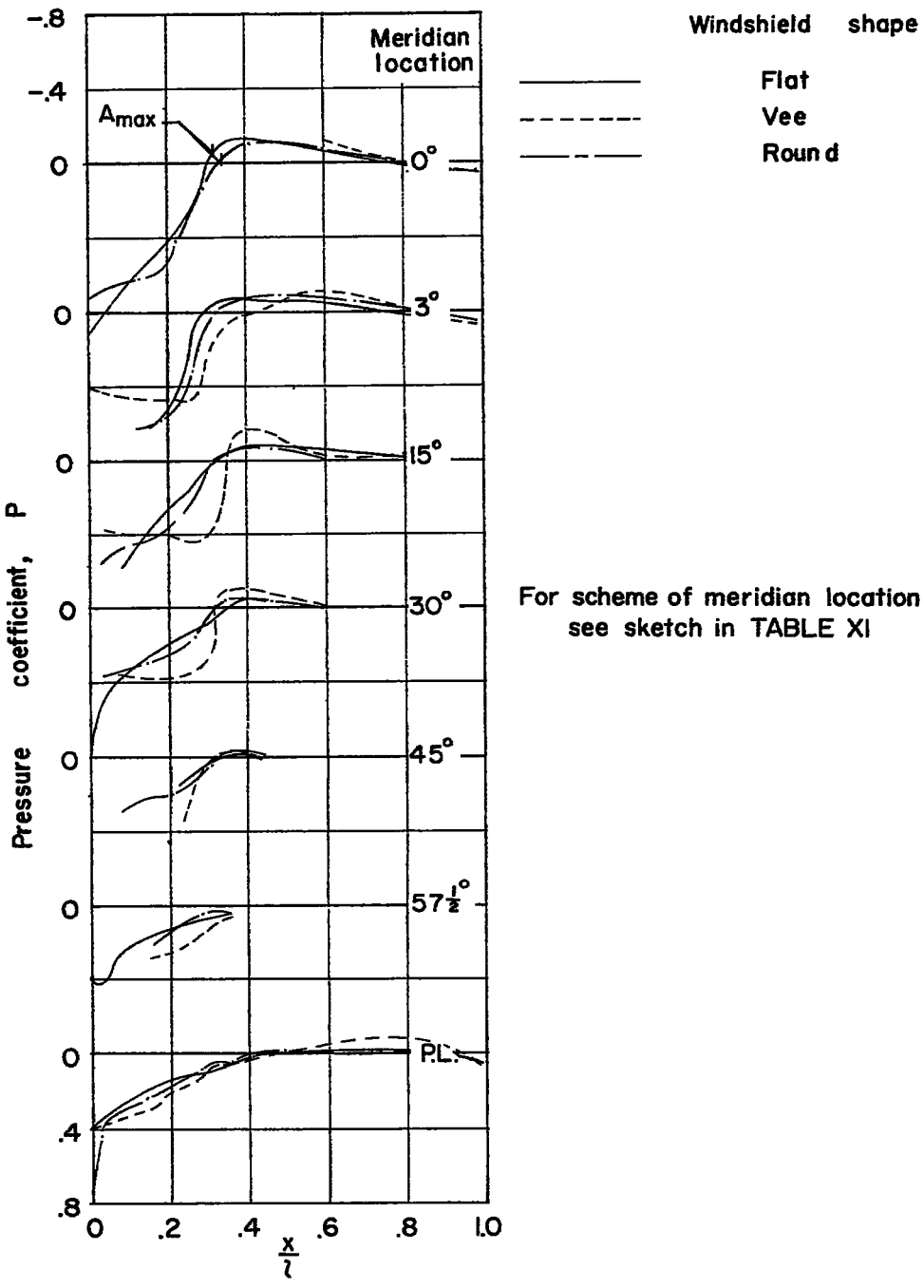
(e) $\alpha = 6.5°$; $\beta = -4°$.

Figure 9.- Continued.



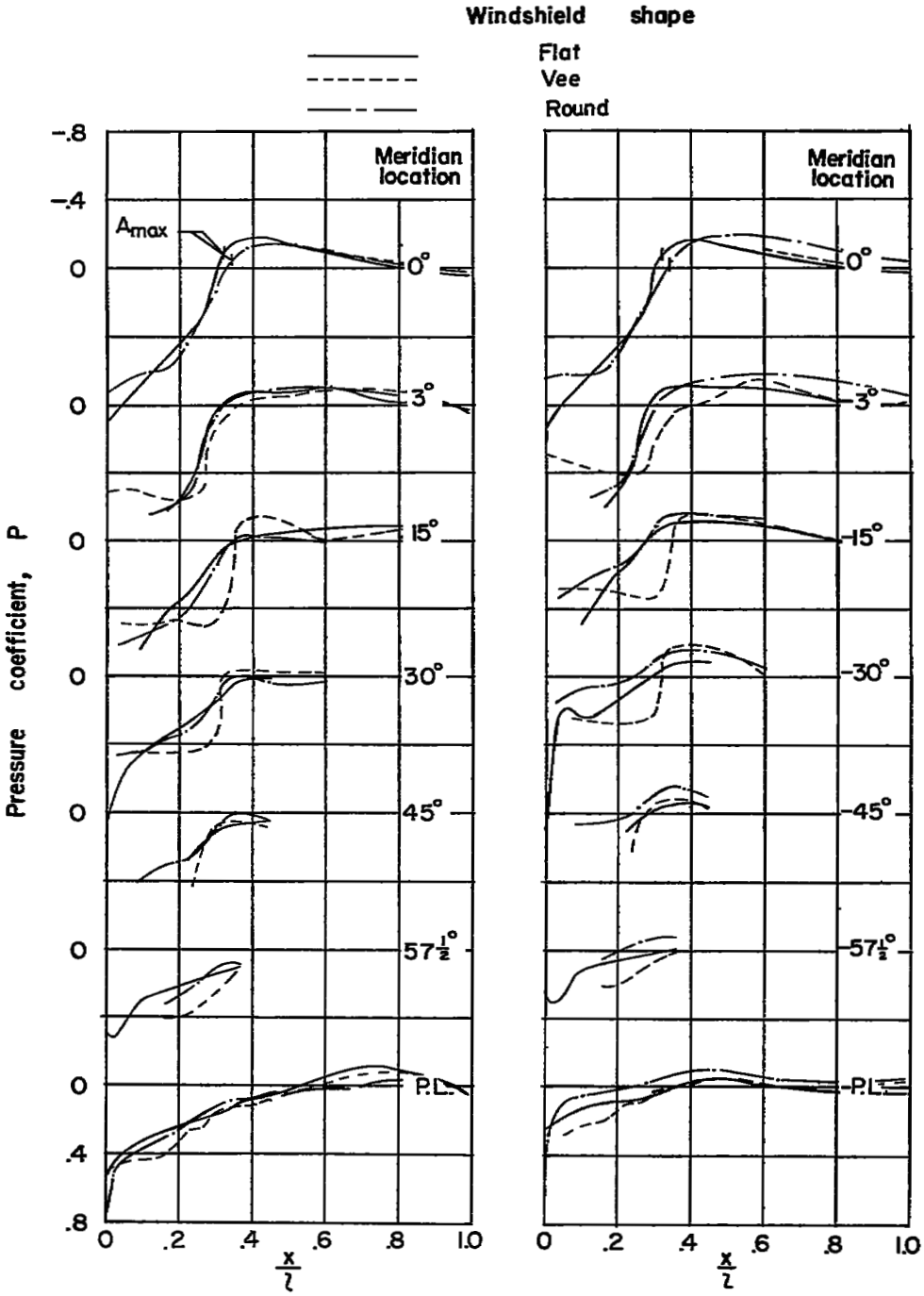
(f) $\alpha = 6.5°$; $\beta = -8°$.

Figure 9.- Concluded.



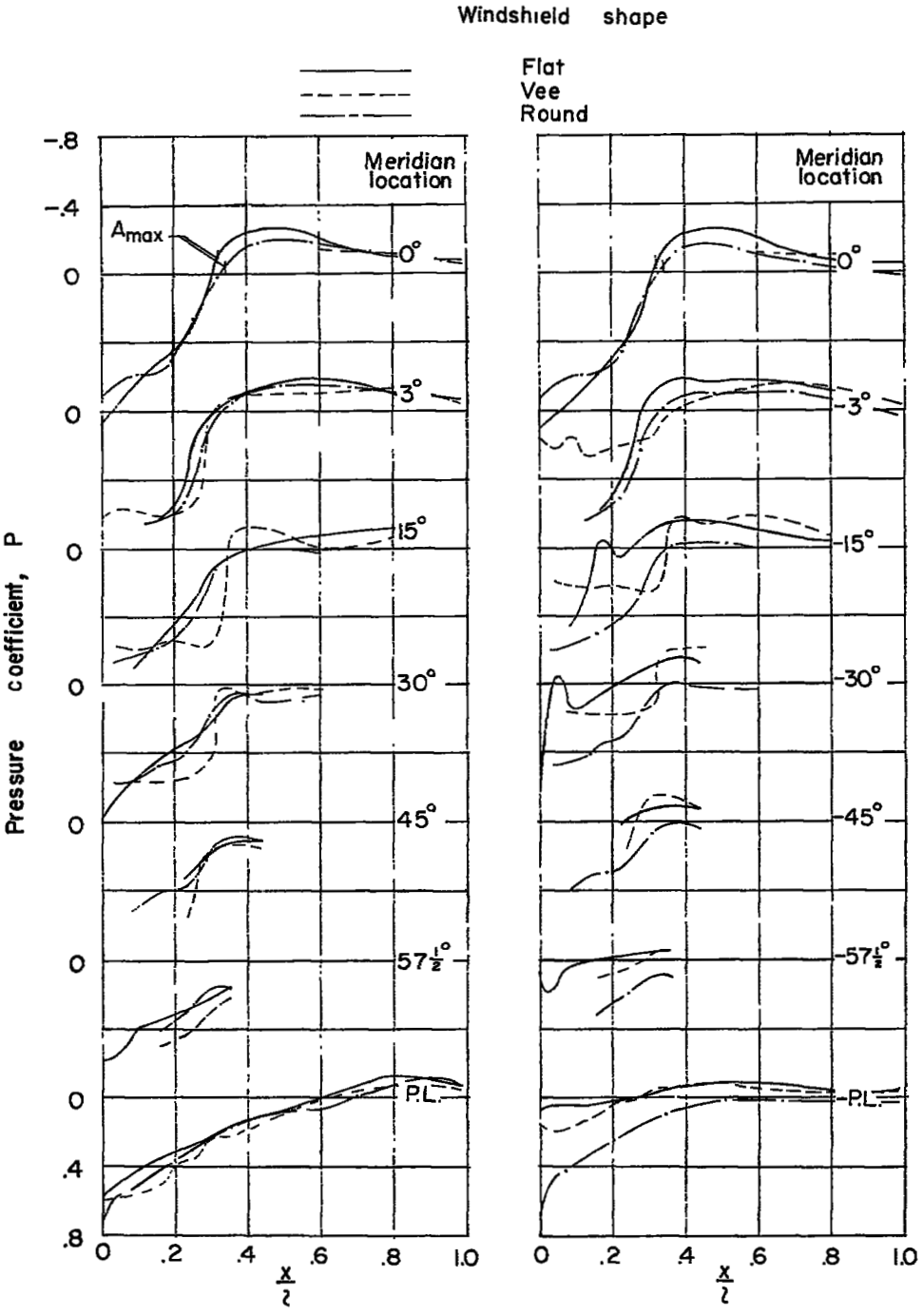
(a) $\alpha = 0.4°$; $\beta = 0°$.

Figure 10.- Effect of windshield shape on pressure-coefficient distributions on large forward-located canopies at M = 2.01.



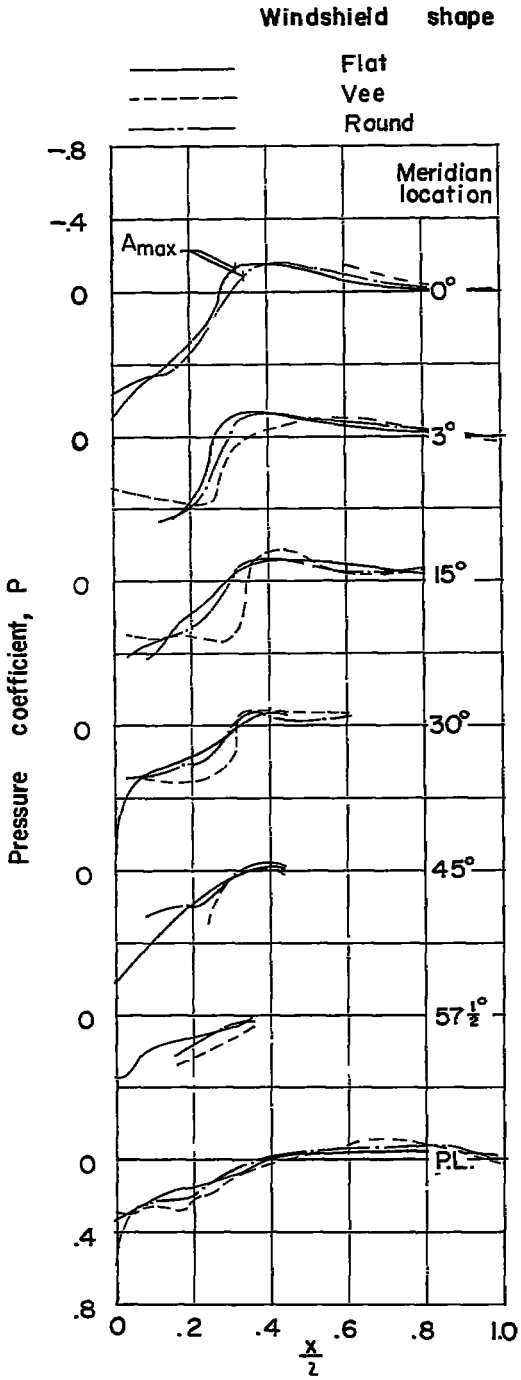
(b) $\alpha = 0.4^{\circ}$; $\beta = -4^{\circ}$.

Figure 10.- Continued.



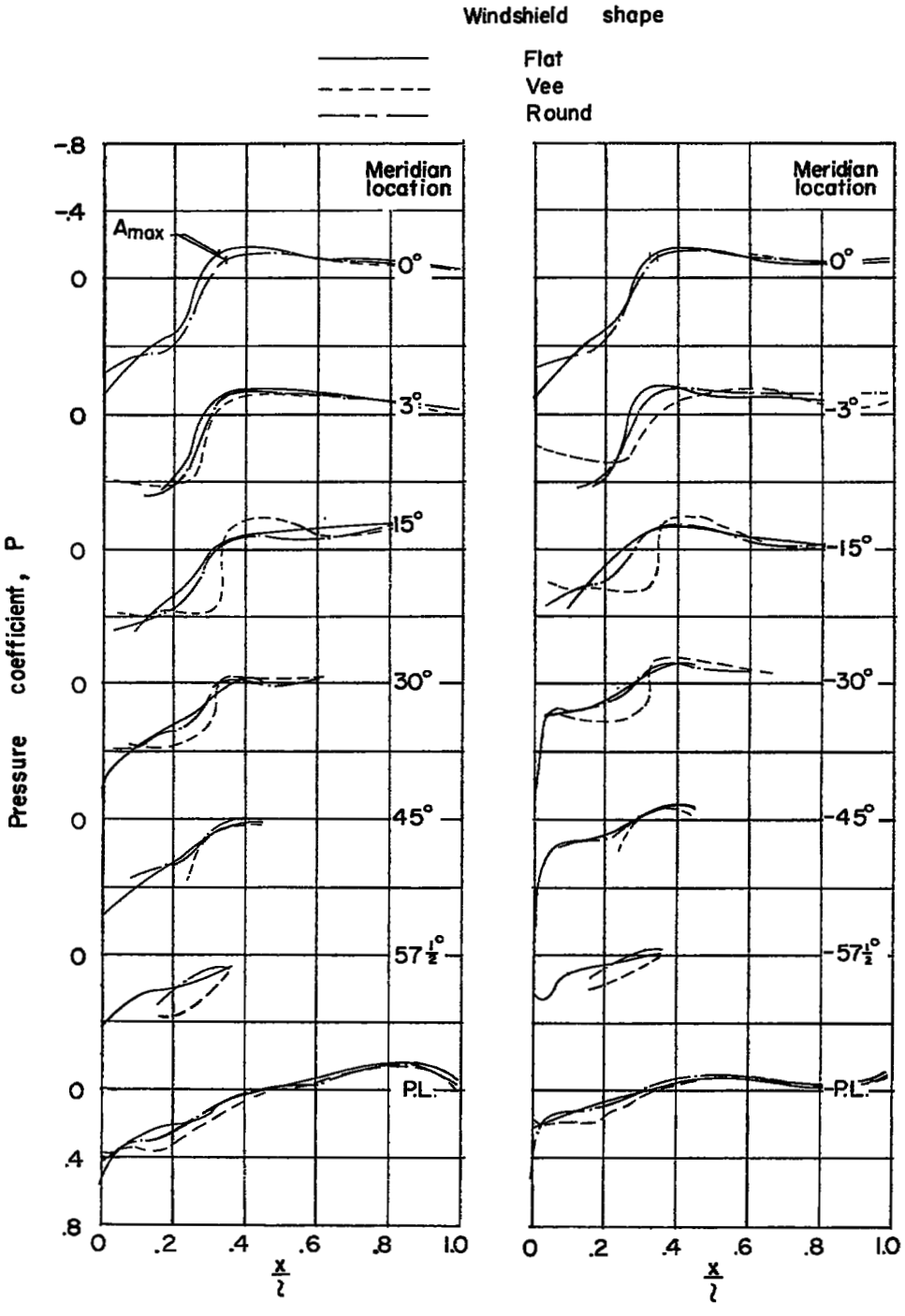
(c) $\alpha = 0.4^{\circ}$; $\beta = -8^{\circ}$.

Figure 10.- Continued.



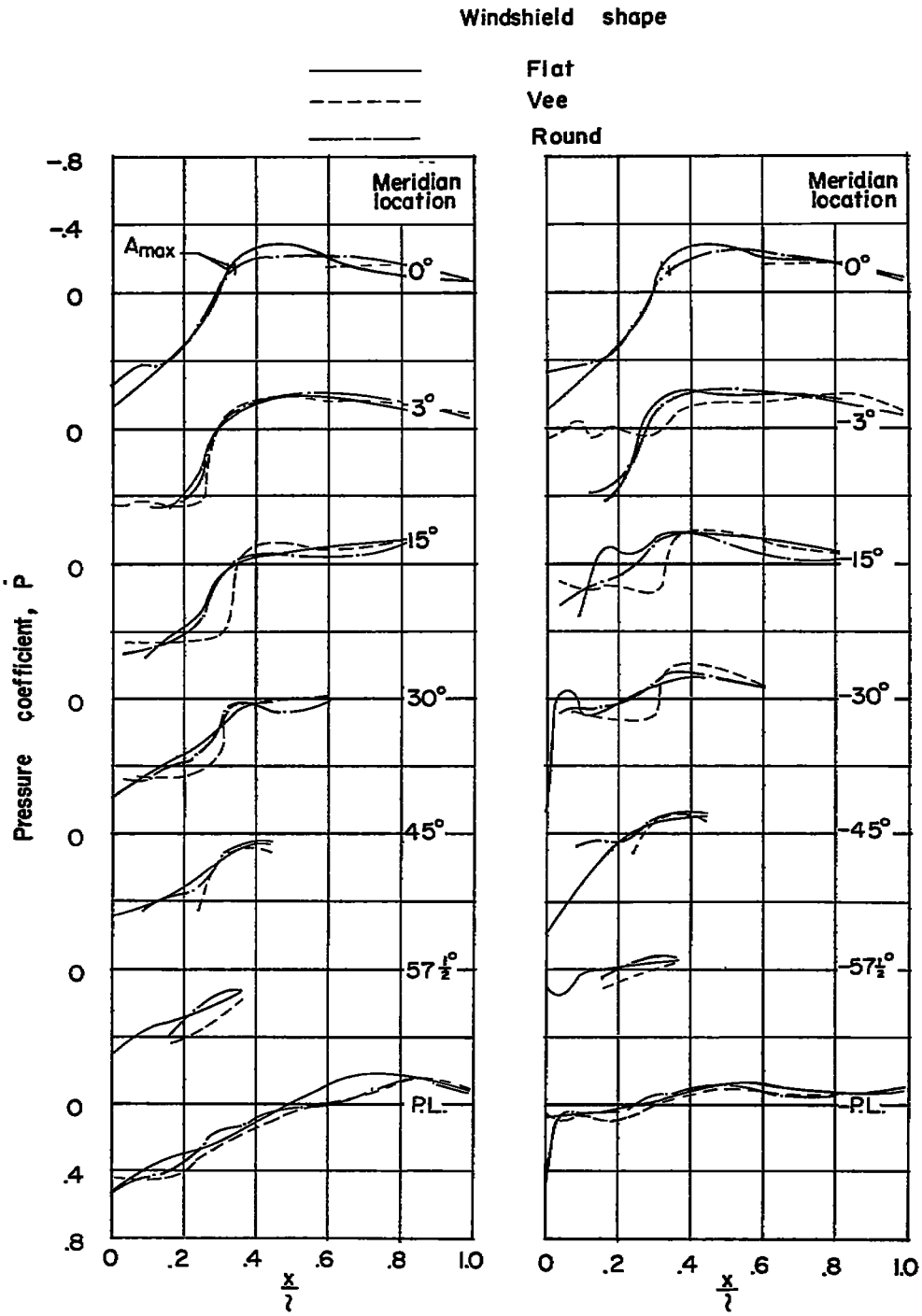
(d) $\alpha = 6.5°$; $\beta = 0°$.

Figure 10.- Continued.



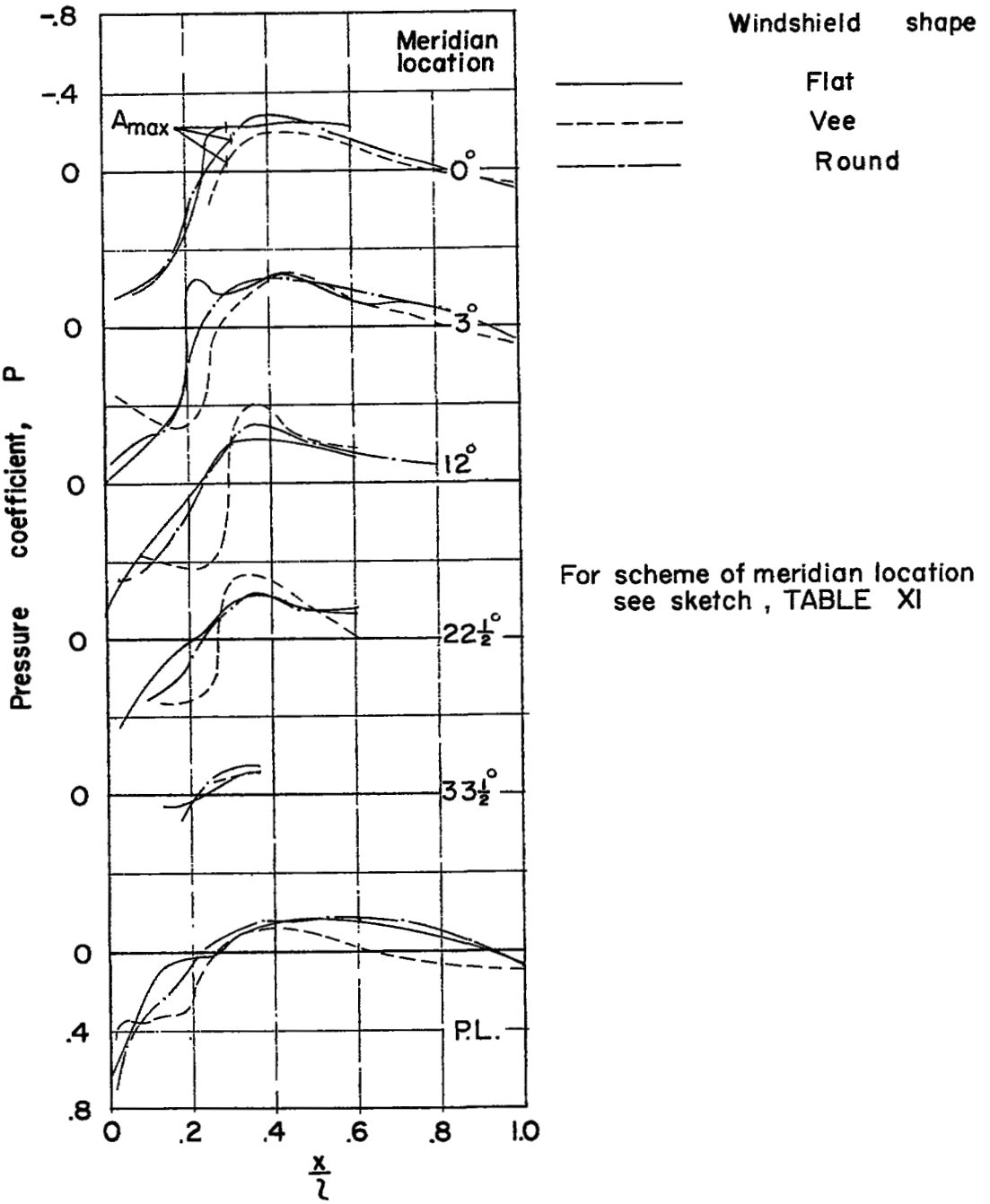
(e) $\alpha = 6.5^{\circ}$; $\beta = -4^{\circ}$.

Figure 10.- Continued.



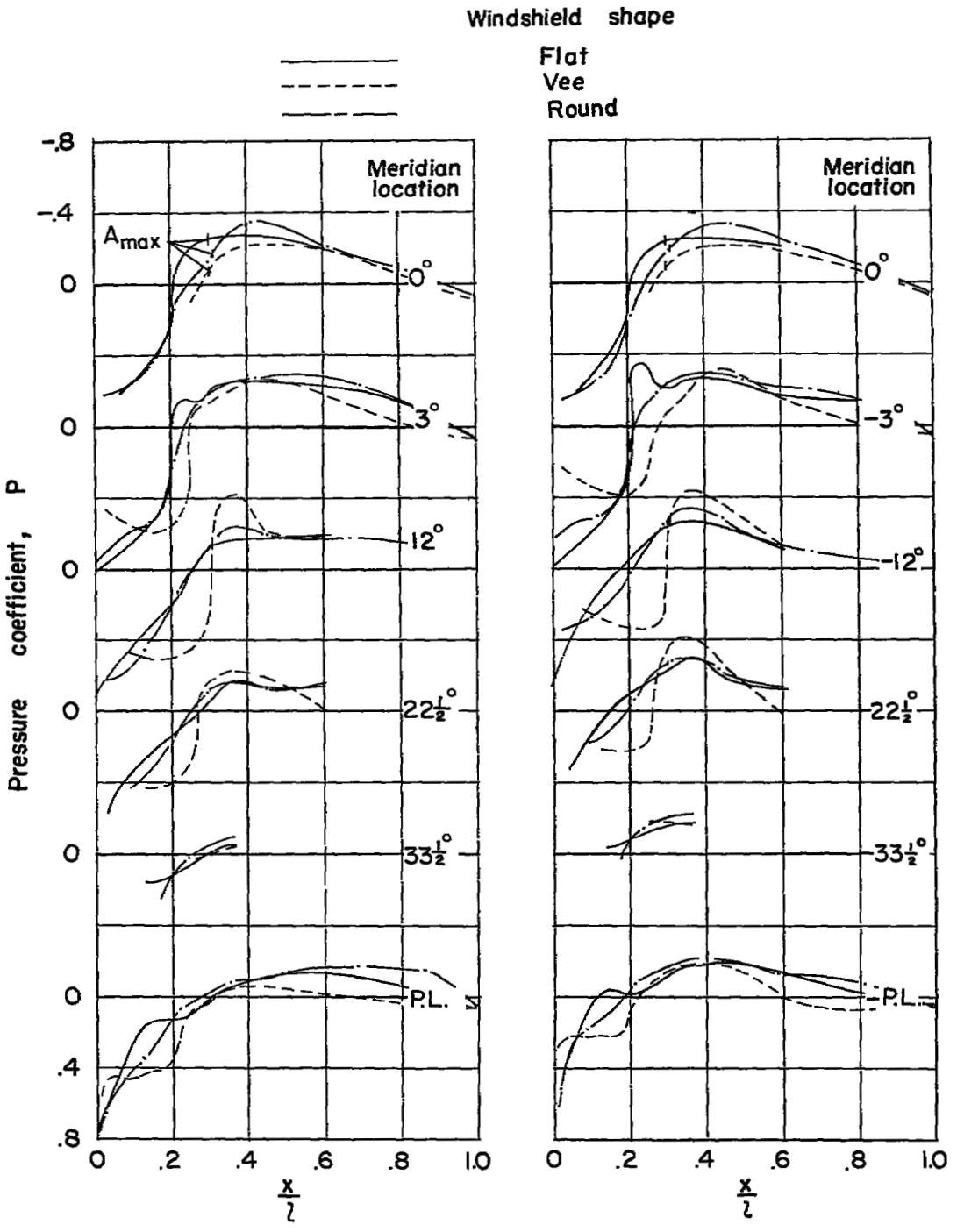
(f) $\alpha = 6.5^{\circ}$; $\beta = -8^{\circ}$.

Figure 10.- Concluded.



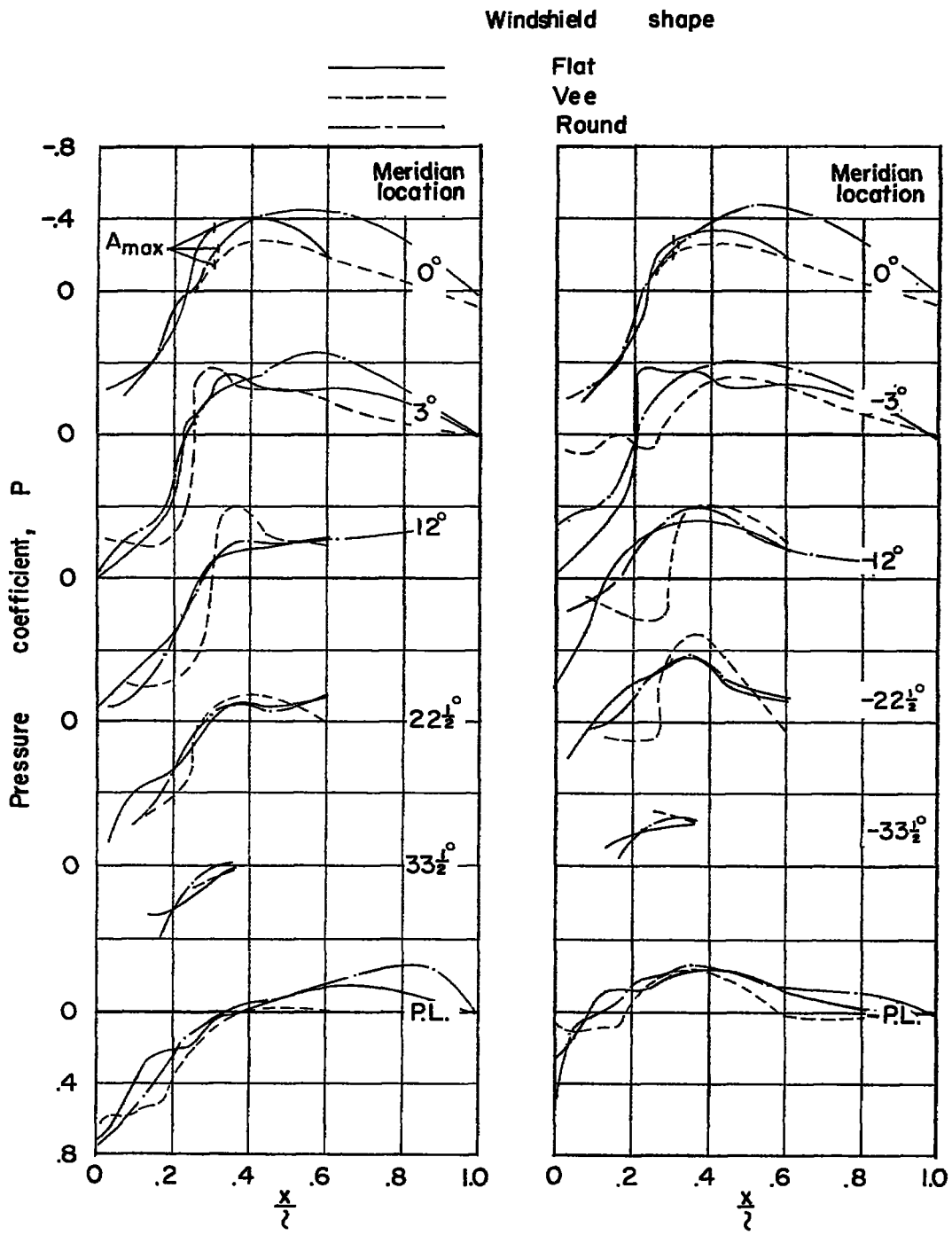
(a) $\alpha = 0.4^{\circ}$; $\beta = 0^{\circ}$.

Figure 11.- Effect of windshield shape on pressure-coefficient distributions on large rearward-located canopies at M = 1.41.



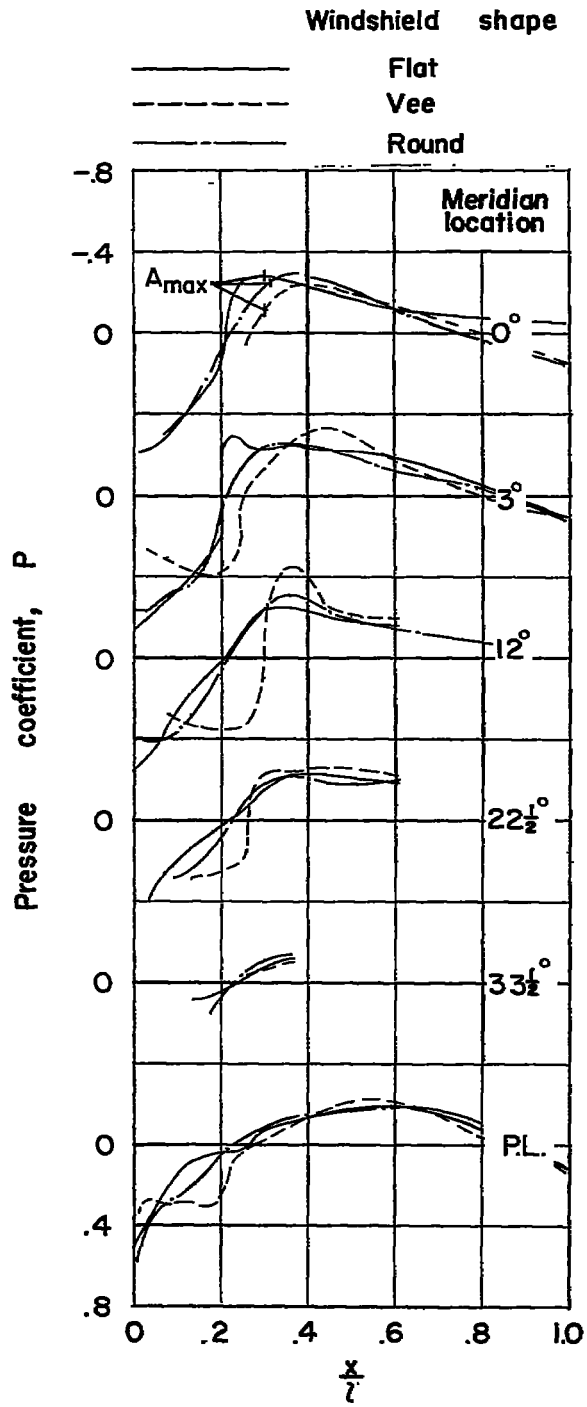
(b) $\alpha = 0.4^\circ$; $\beta = -4^\circ$.

Figure 11.- Continued.



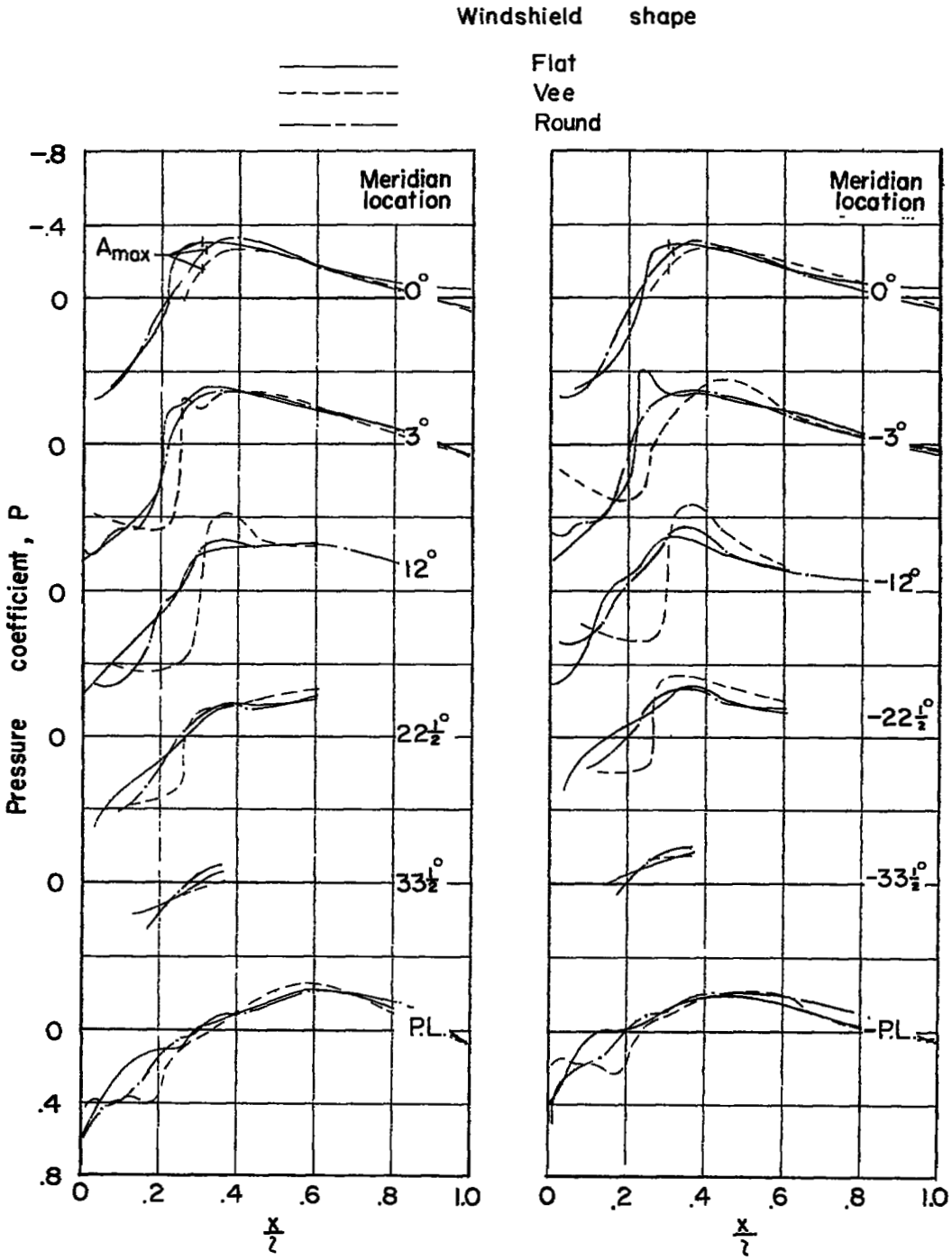
(c) $\alpha = 0.4°$; $\beta = -8°$.

Figure 11.- Continued.



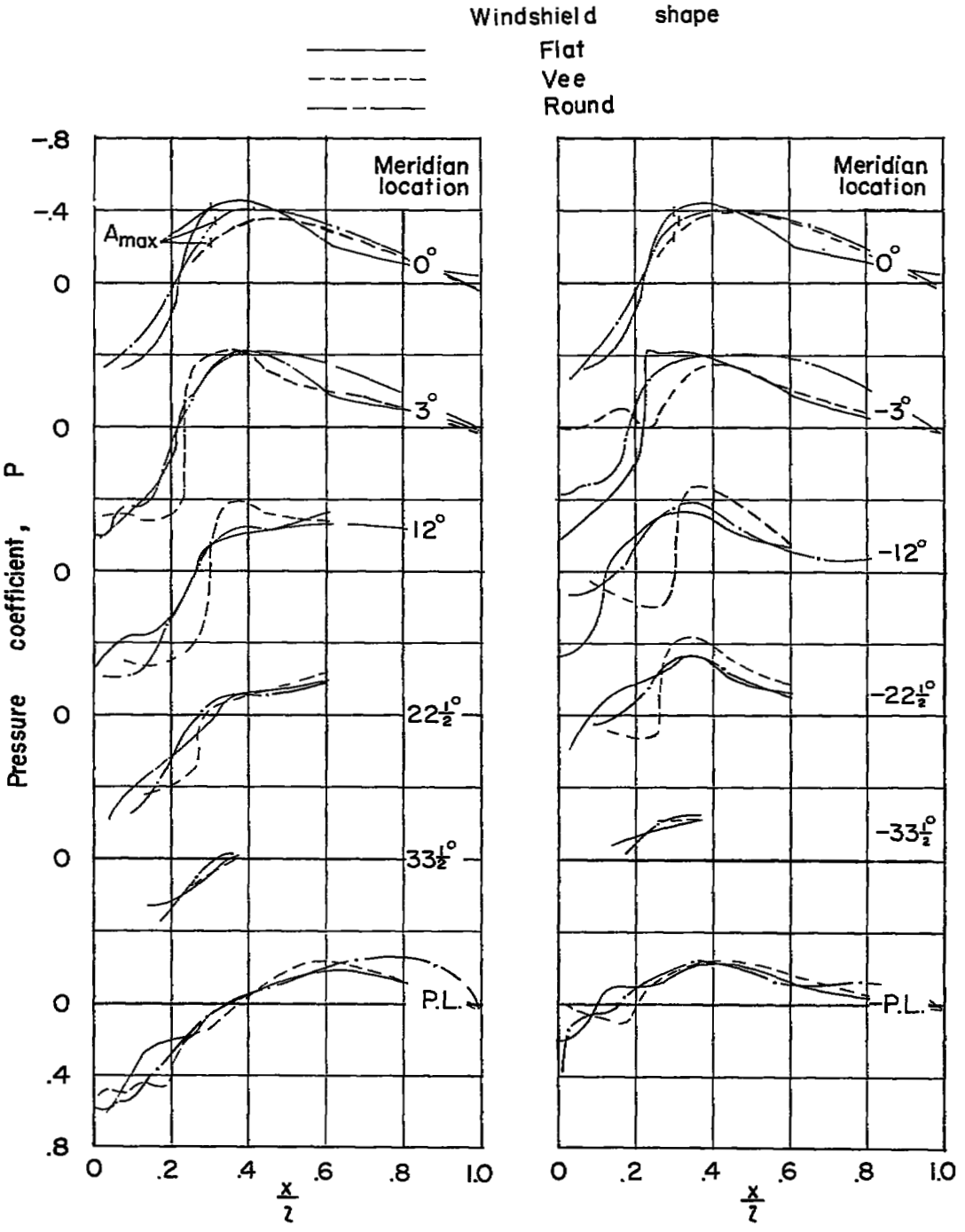
(d) $\alpha = 6.5^{\circ}$; $\beta = 0^{\circ}$.

Figure 11.- Continued.



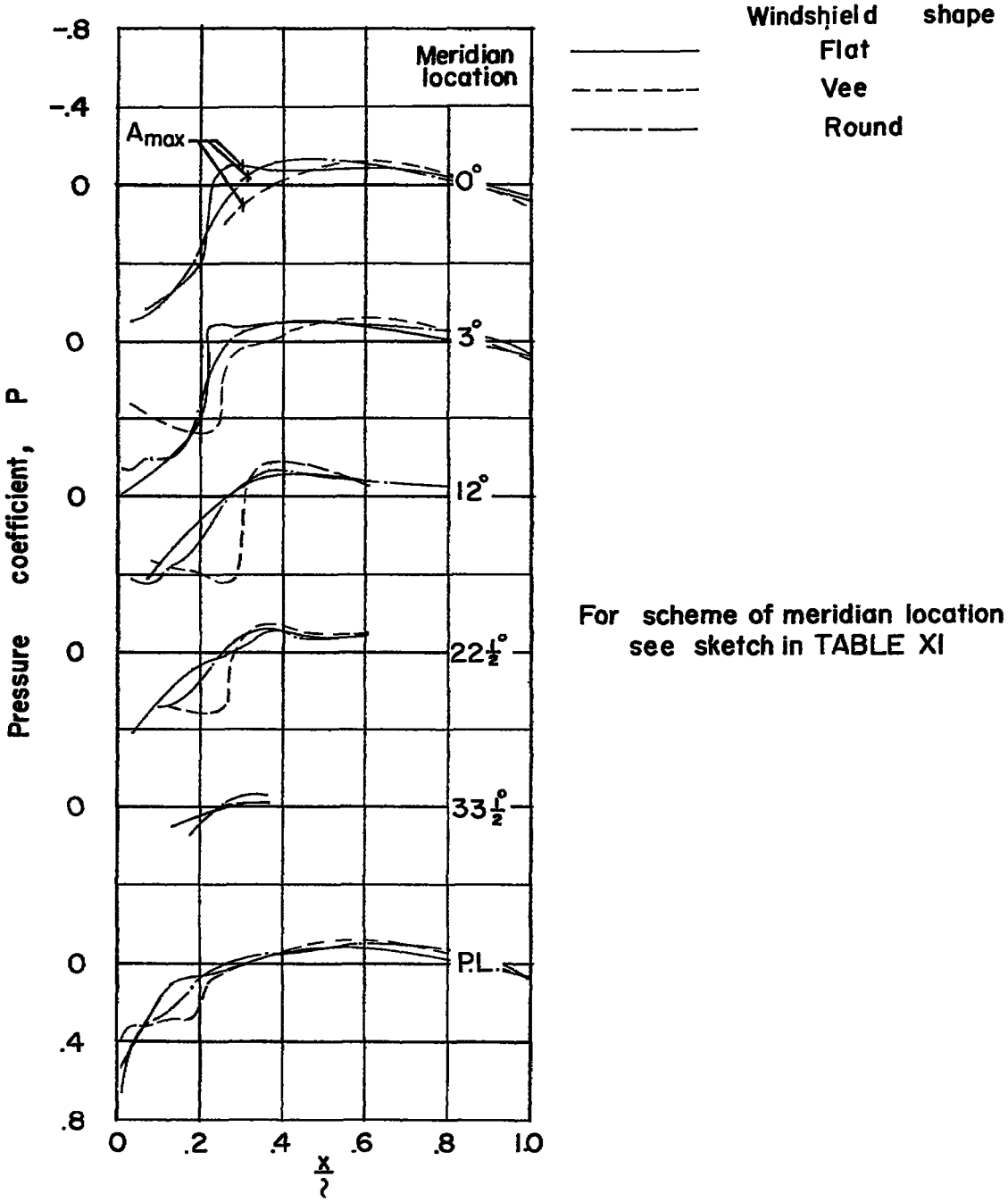
(e) $\alpha = 6.5°$; $\beta = -4°$.

Figure 11.- Continued.



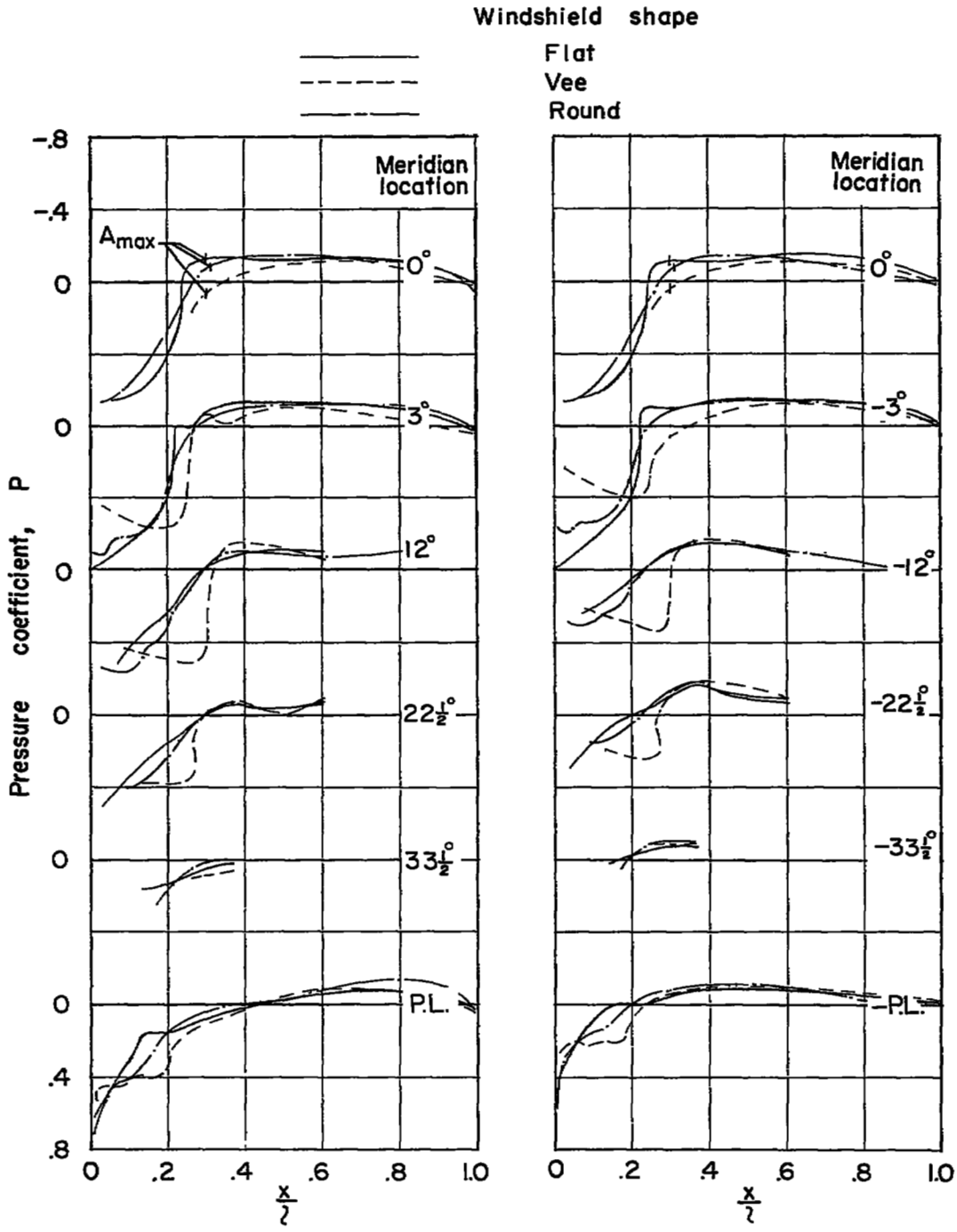
(f) $\alpha = 6.5°$; $\beta = -8°$.

Figure 11.- Concluded.



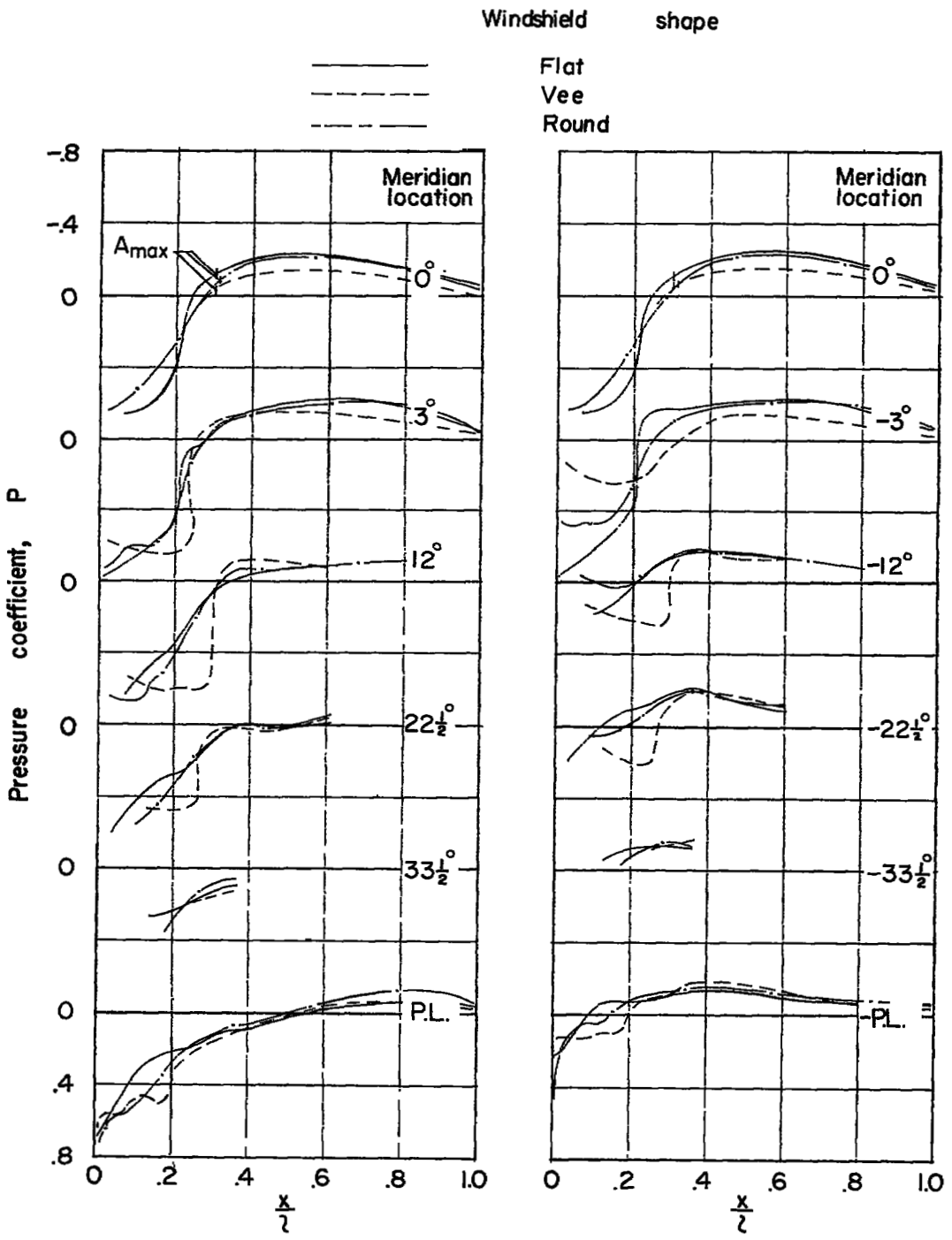
(a) $\alpha = 0.4^{\circ}$; $\beta = 0^{\circ}$.

Figure 12.- Effect of windshield shape on pressure-coefficient distributions on large rearward-located canopies at M = 2.01.



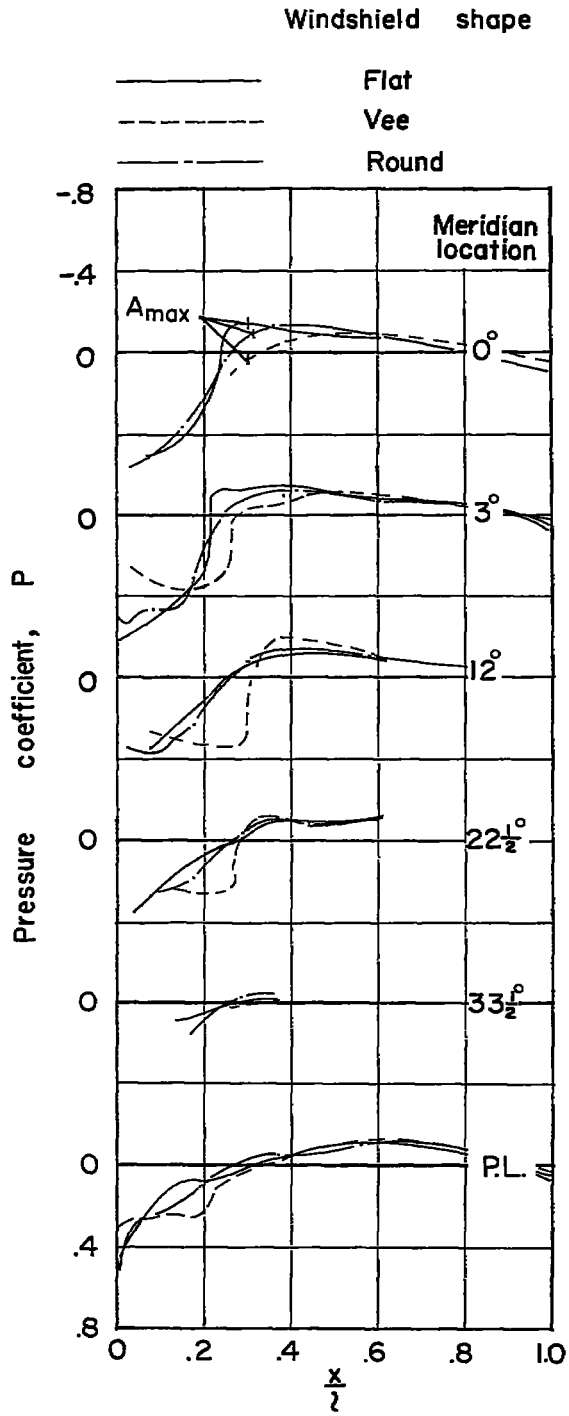
(b) $\alpha = 0.4°$; $\beta = -4°$.

Figure 12.- Continued.



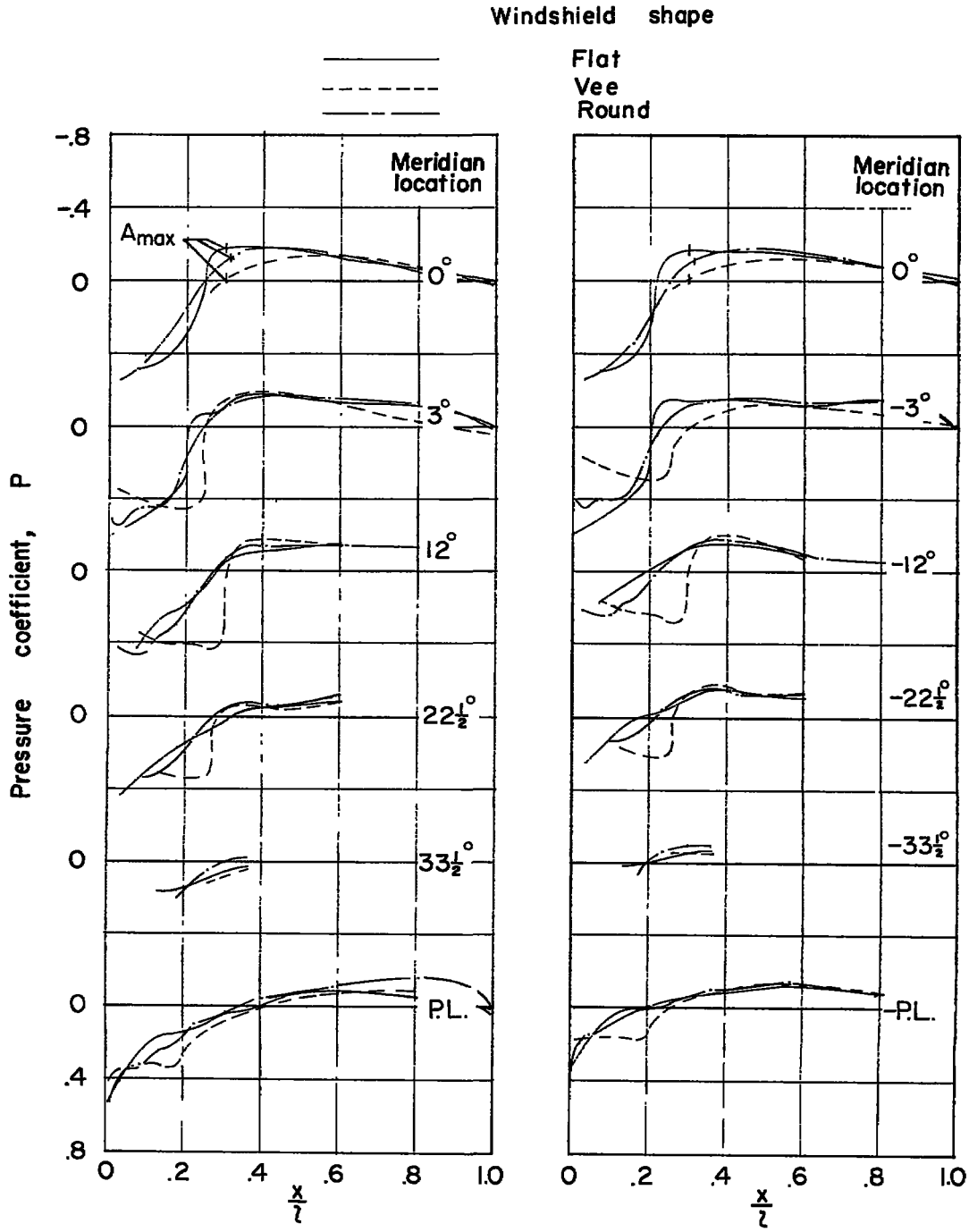
(c) $\alpha = 0.4^{\circ}$; $\beta = -8^{\circ}$.

Figure 12.- Continued.



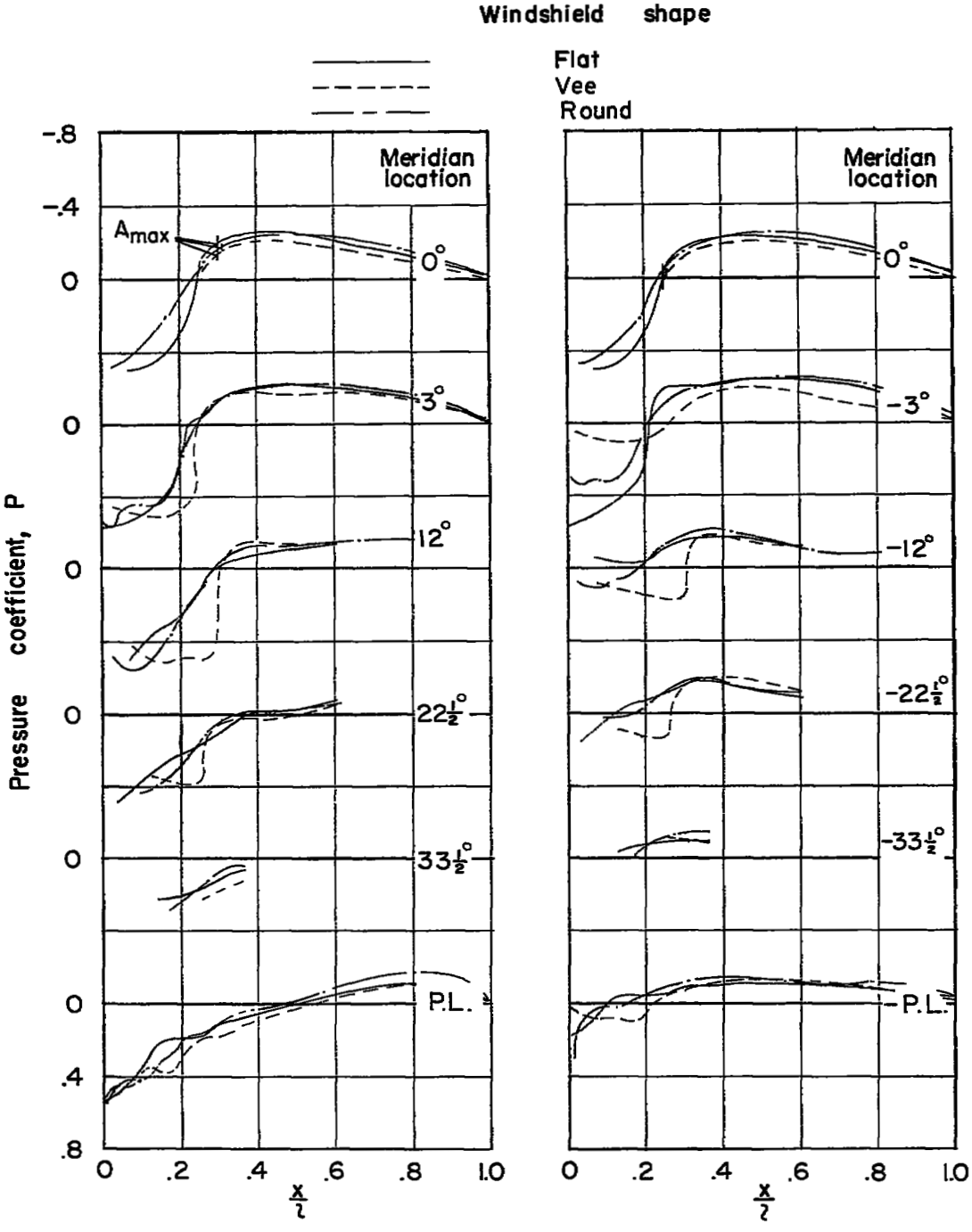
(d) $\alpha = 6.5^{\circ}$; $\beta = 0^{\circ}$.

Figure 12.- Continued.



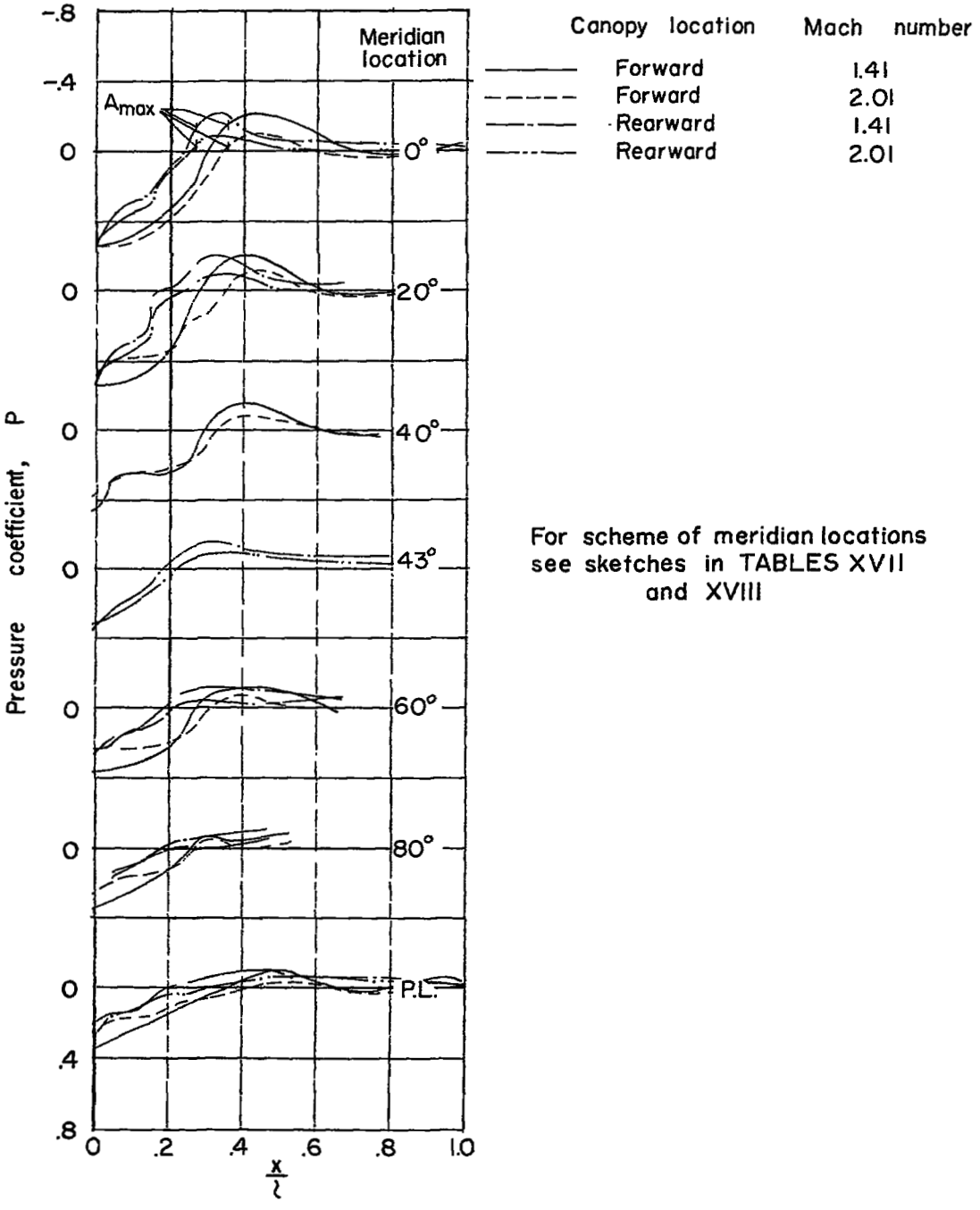
(e) $\alpha = 6.5°$; $\beta = -4°$.

Figure 12.- Continued.



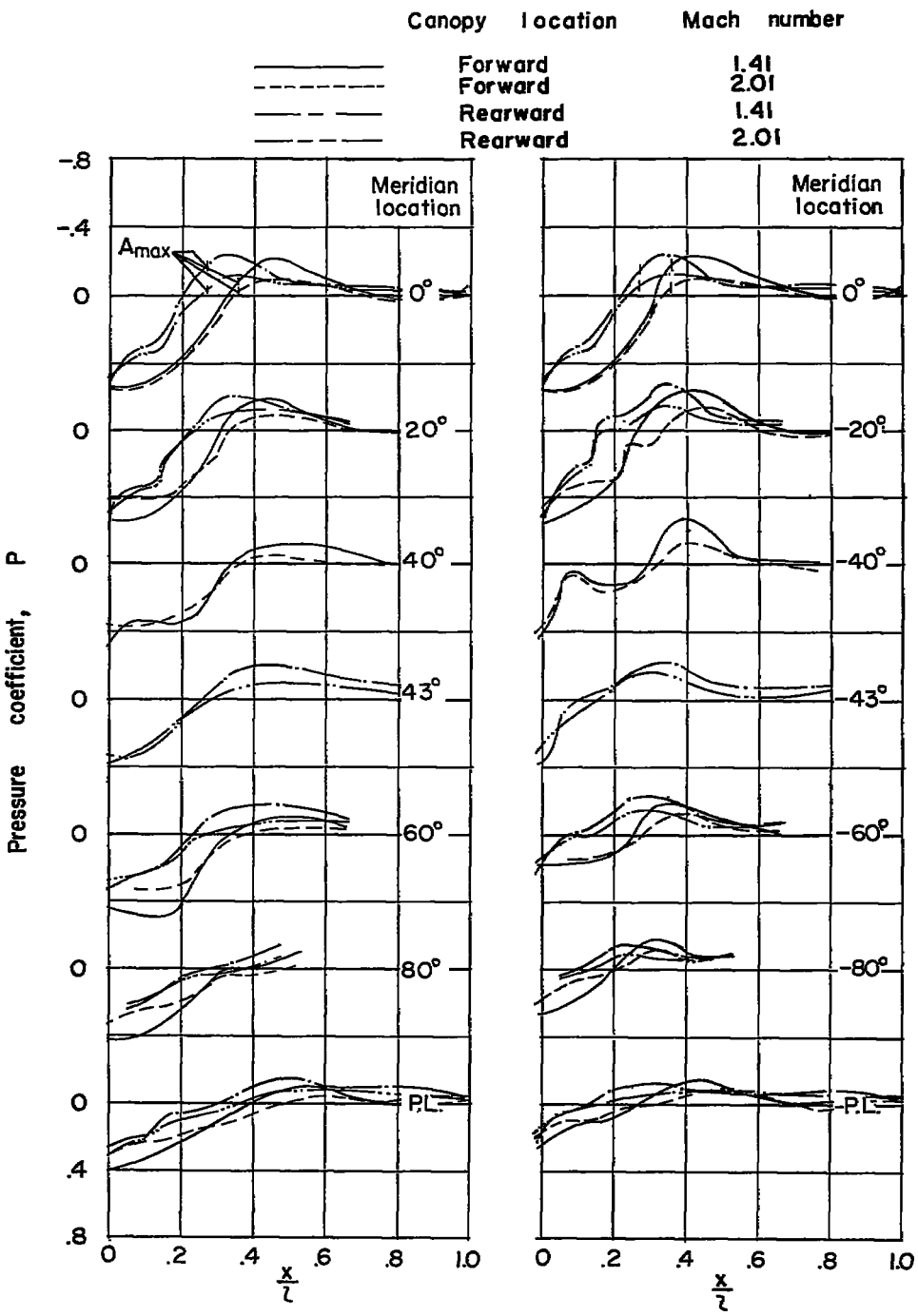
(f) $\alpha = 6.5^{\circ}$; $\beta = -8^{\circ}$.

Figure 12.- Concluded.



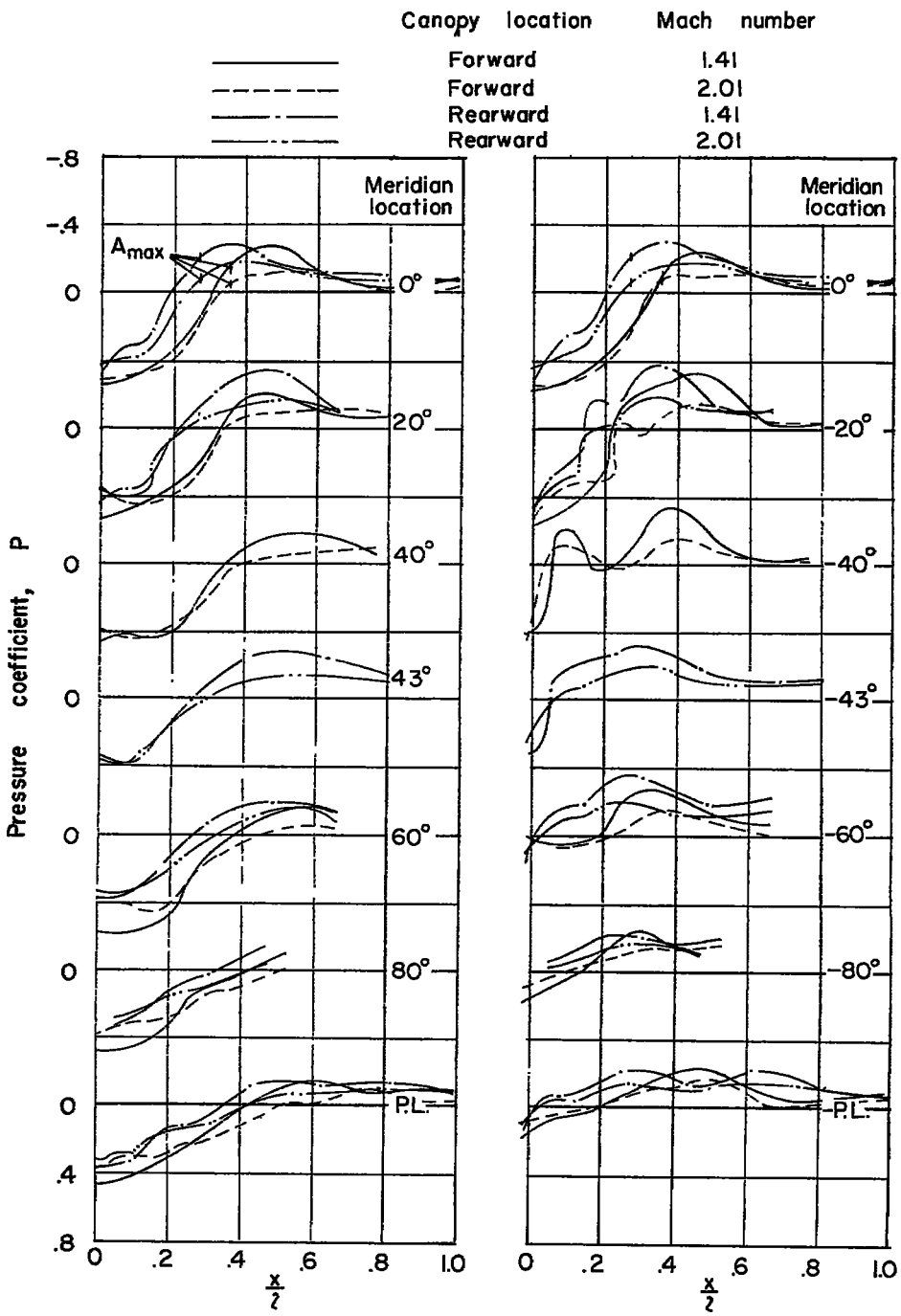
(a) $\alpha = 0.4^{\circ}$; $\beta = 0^{\circ}$.

Figure 13.- Pressure distributions on small canopies at M = 1.41 and 2.01 for various angles of attack and sideslip.



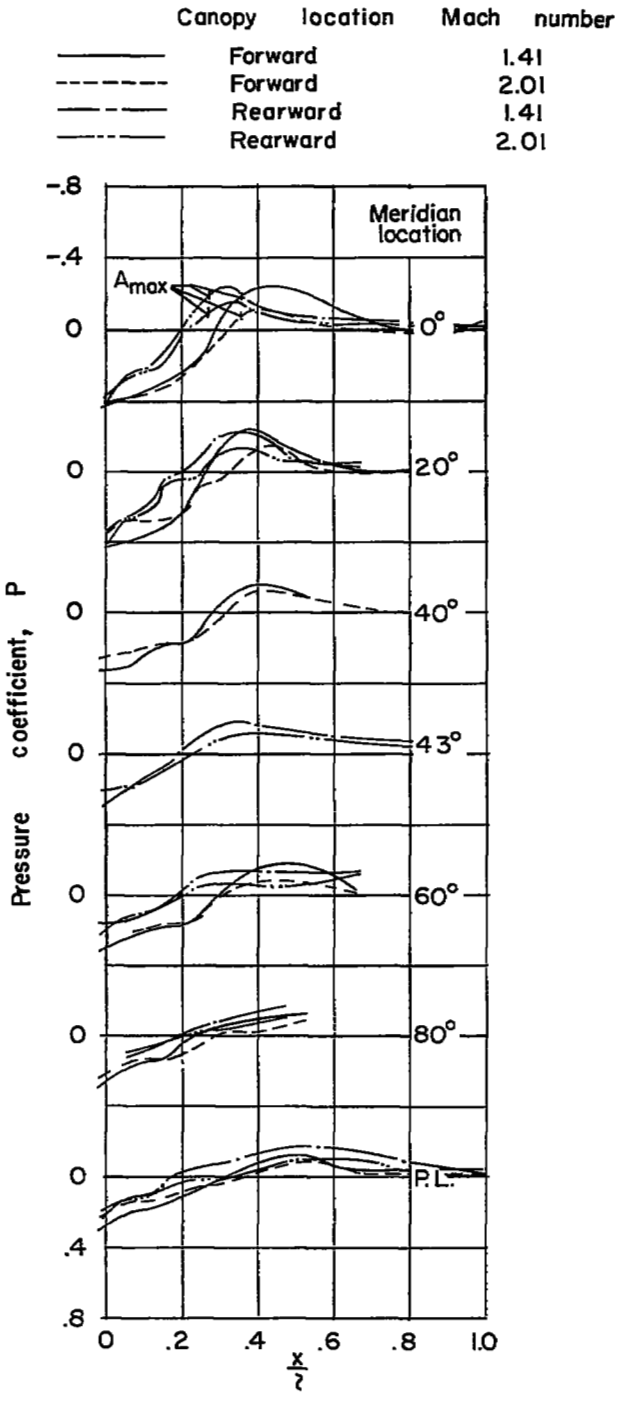
(b) $\alpha = 0.4^{\circ}$; $\beta = -4^{\circ}$.

Figure 13.- Continued.



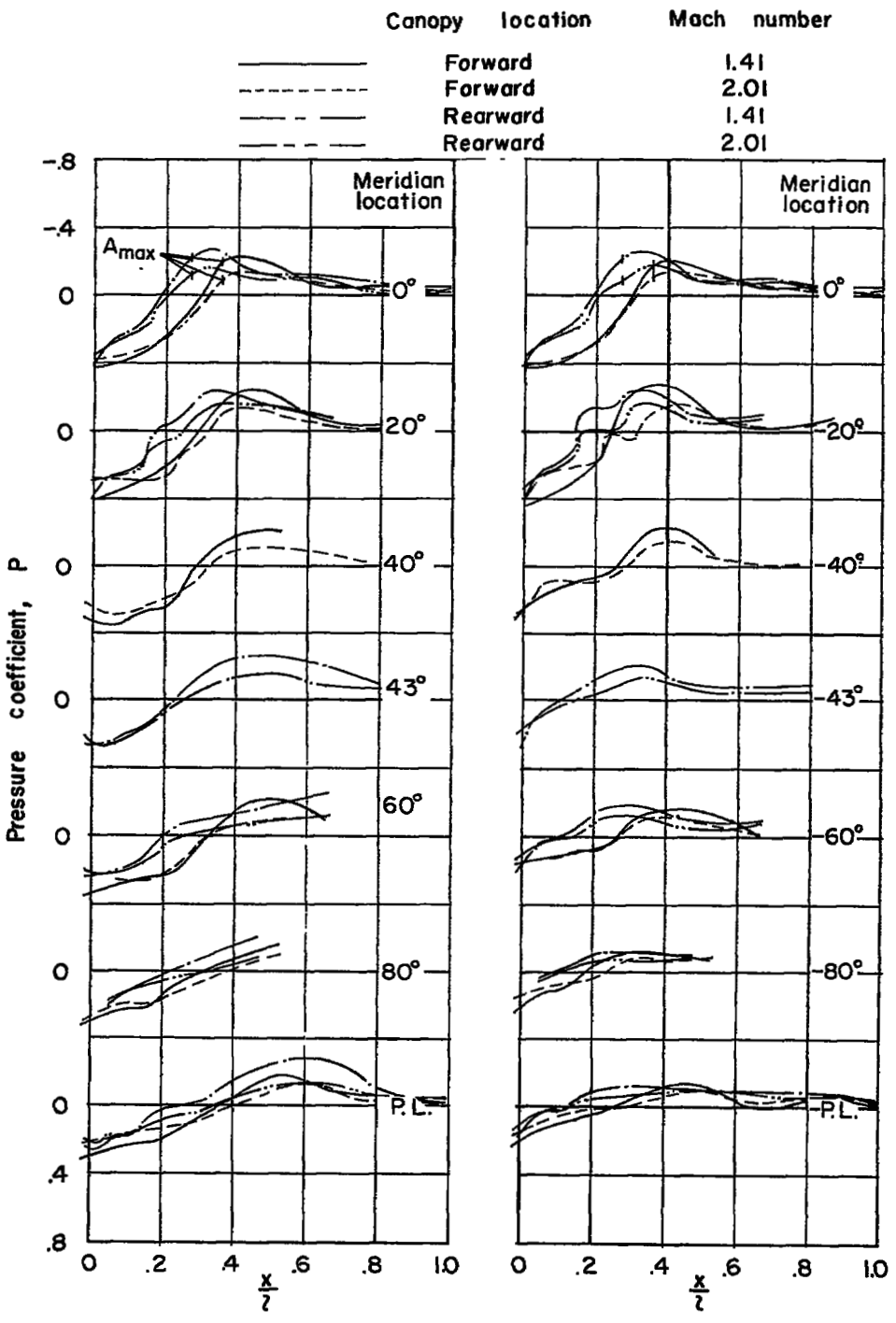
(c) $\alpha = 0.4°$; $\beta = -8°$.

Figure 13.- Continued.



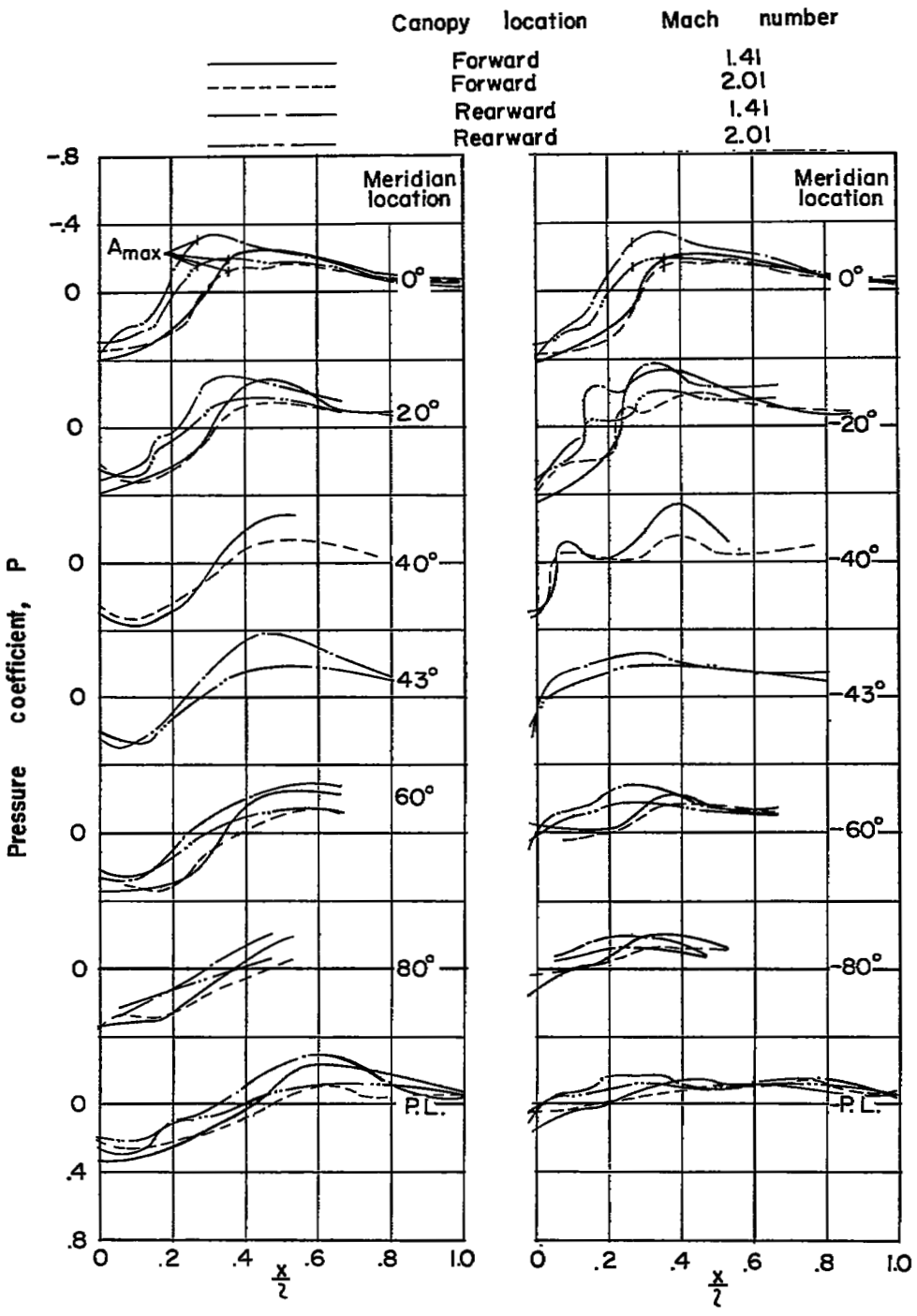
(d) $\alpha = 6.5°$; $\beta = 0°$.

Figure 13.- Continued.



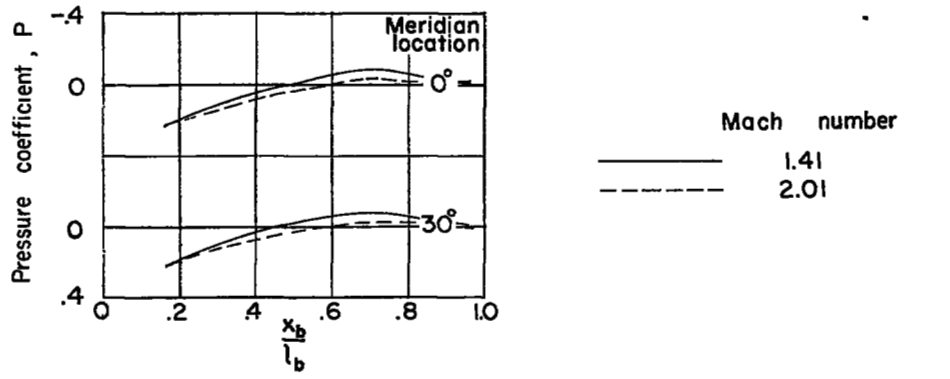
(e) $\alpha = 6.5^{\circ}$; $\beta = -4^{\circ}$.

Figure 13.- Continued.

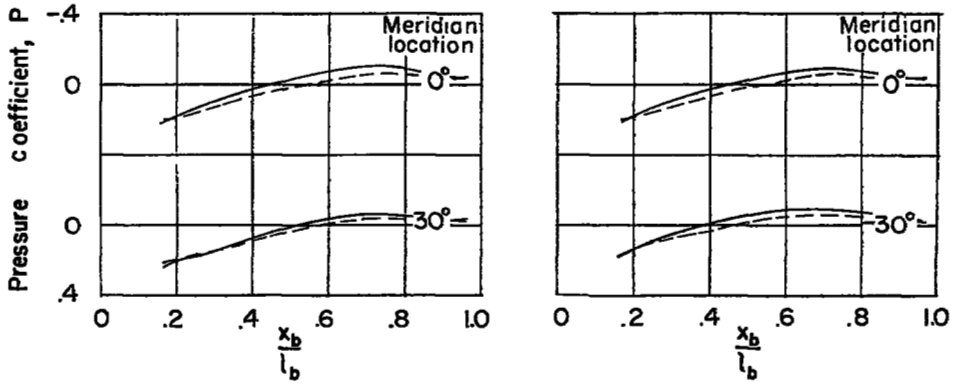


(f) $\alpha = 6.5°$; $\beta = -8°$.

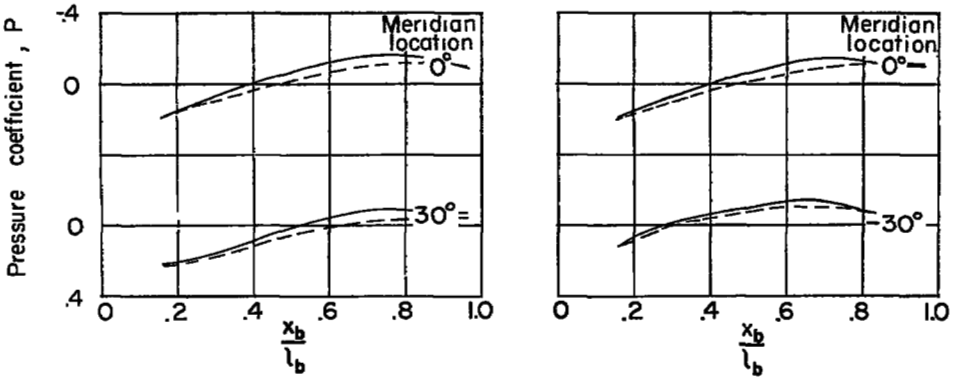
Figure 13.- Concluded.



(a) $\alpha = 0.4^{\circ}$; $\beta = 0^{\circ}$

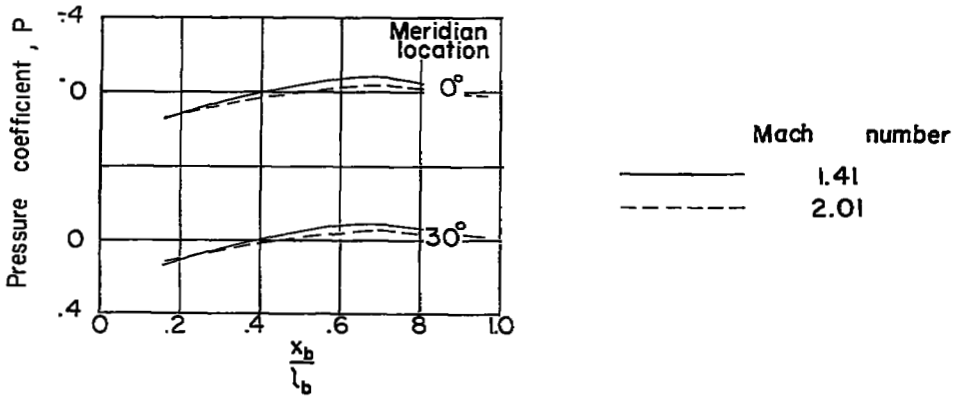


(b) $\alpha = 0.4^{\circ}$; $\beta = -4^{\circ}$.

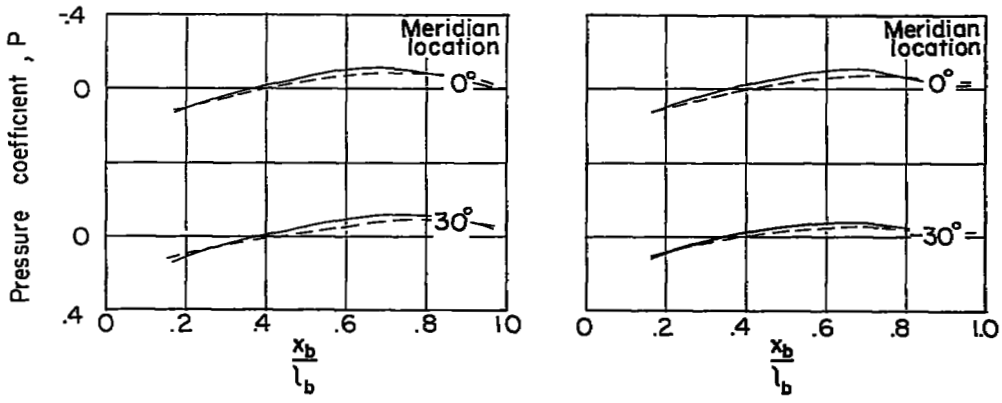


(c) $\alpha = 0.4^{\circ}$; $\beta = -8^{\circ}$.

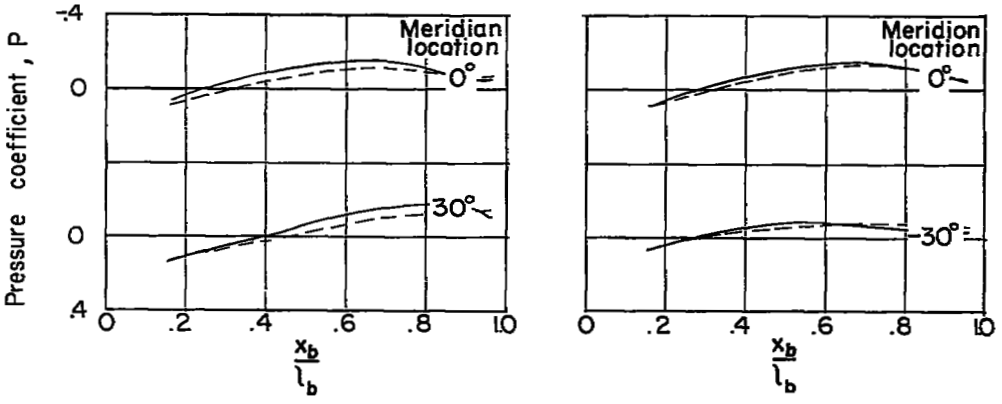
Figure 14.- Pressure distributions on body alone at M = 1.41 and 2.01 for various angles of attack and sideslip.



(d) $\alpha = 6.5°$; $\beta = 0°$.

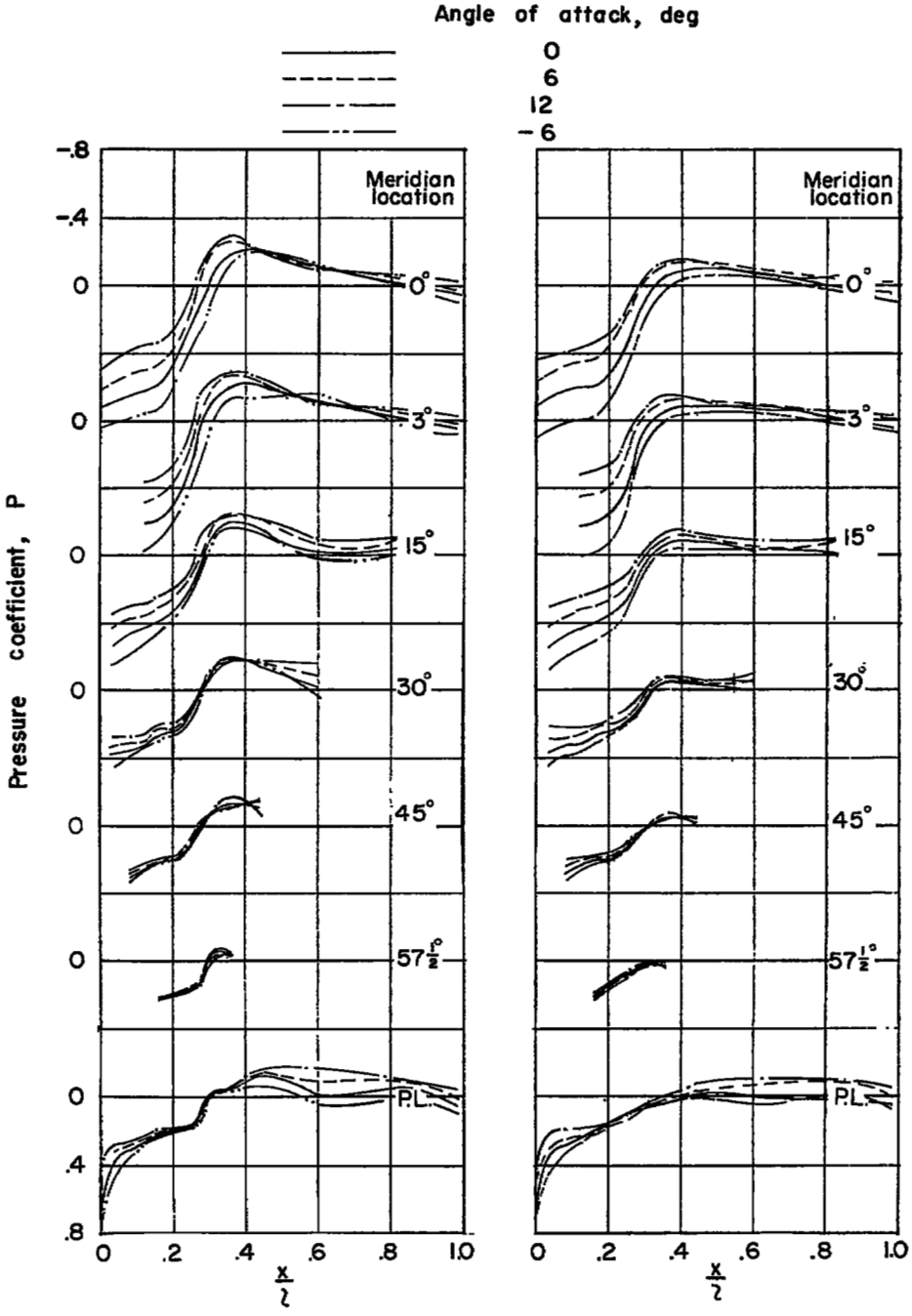


(e) $\alpha = 6.5°$; $\beta = -4°$.



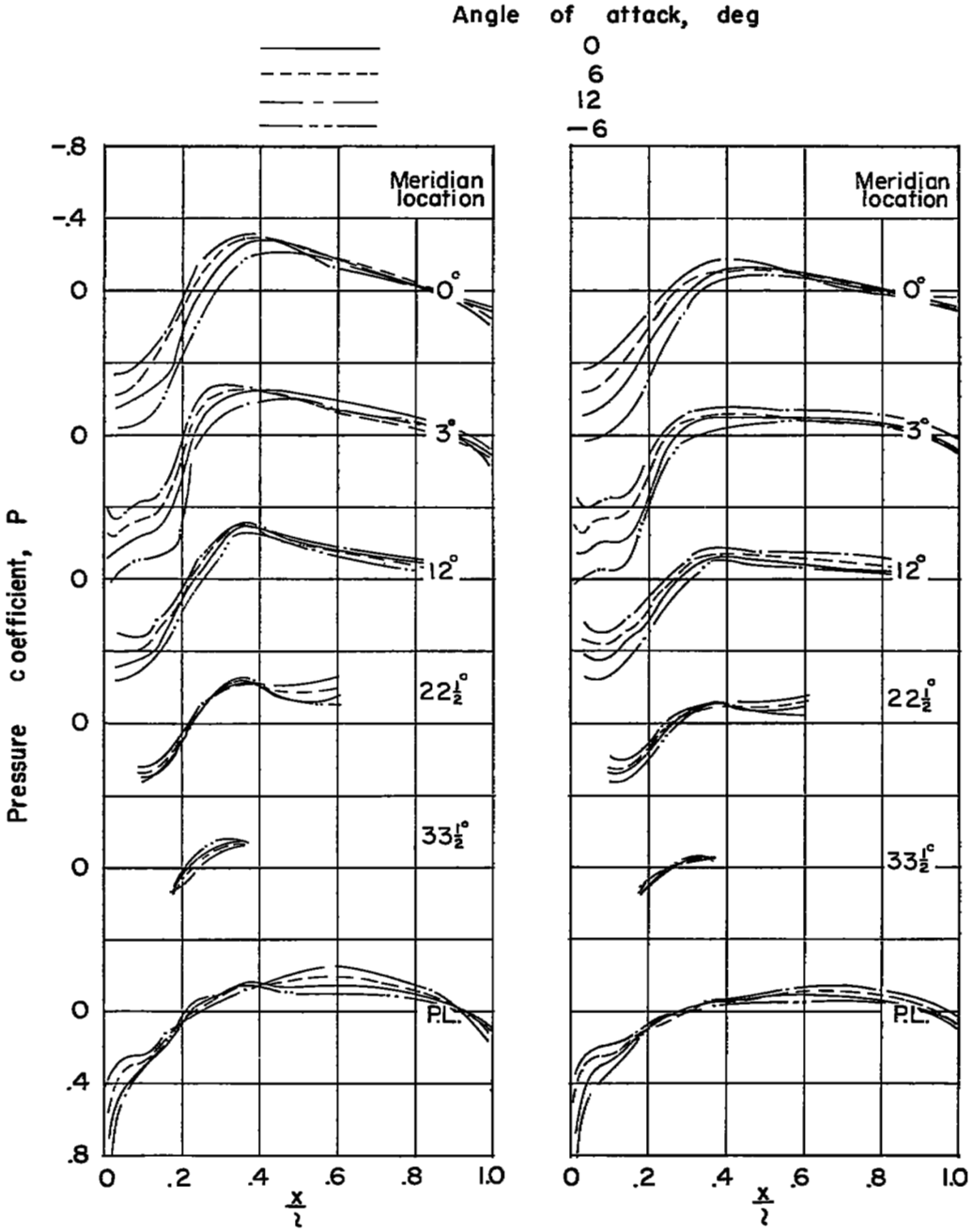
(f) $\alpha = 6.5°$; $\beta = -8°$.

Figure 14.- Concluded.



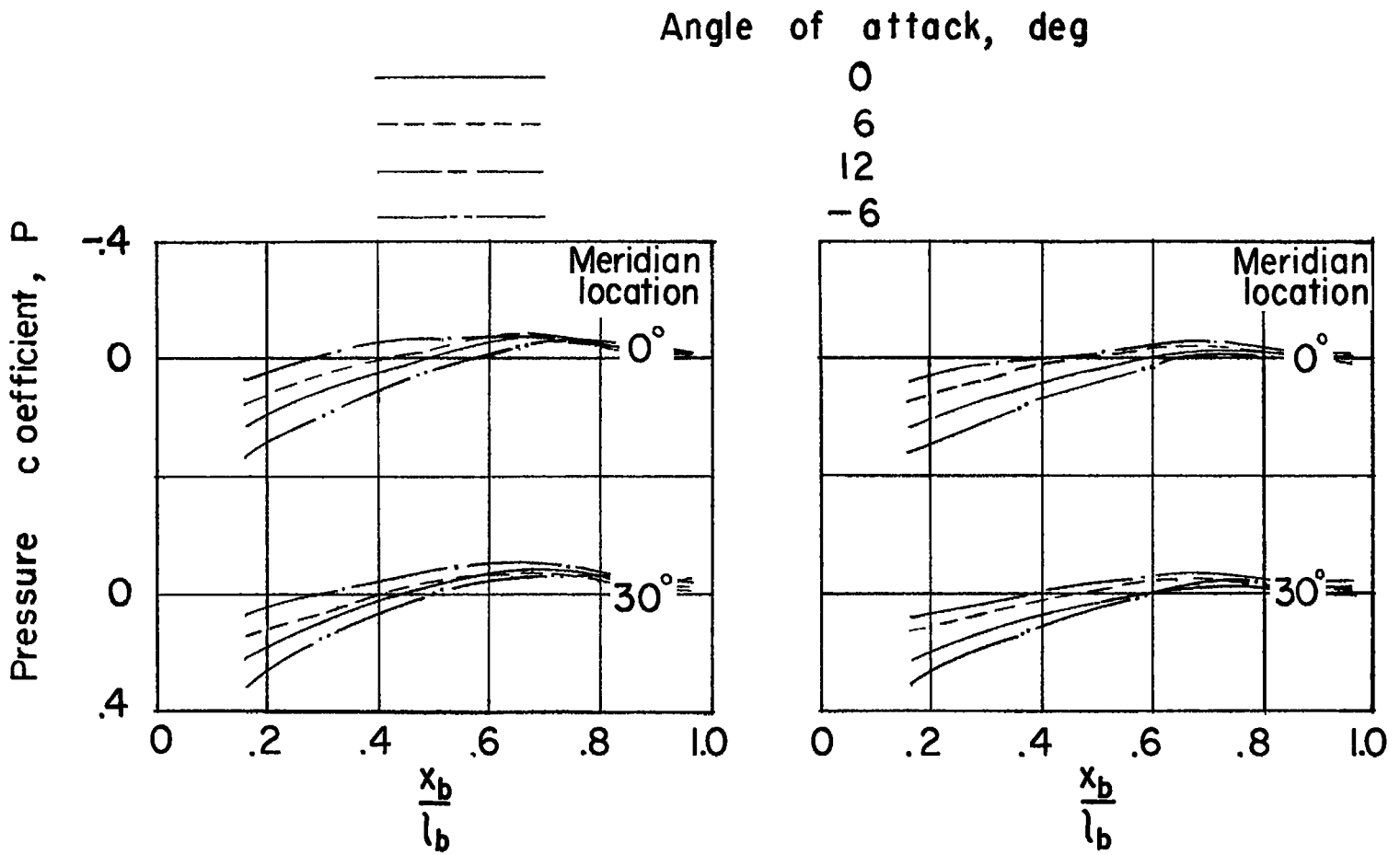
(a) M = 1.41. (b) M = 2.01.

Figure 15.- Pressure distribution on round-windshield canopy in forward location at M = 1.41 and 2.01 for various angles of attack and 0.3° sideslip.



(a) M = 1.41. (b) M = 2.01.

Figure 16.- Pressure distribution on round-windshield canopy in rearward location at M = 1.41 and 2.01 for various angles of attack and 0.3° sideslip.



(a) M = 1.41. (b) M = 2.01.

Figure 17.- Pressure distribution on body alone at M = 1.41 and 2.01 for various angles of attack and 0.3° sideslip.

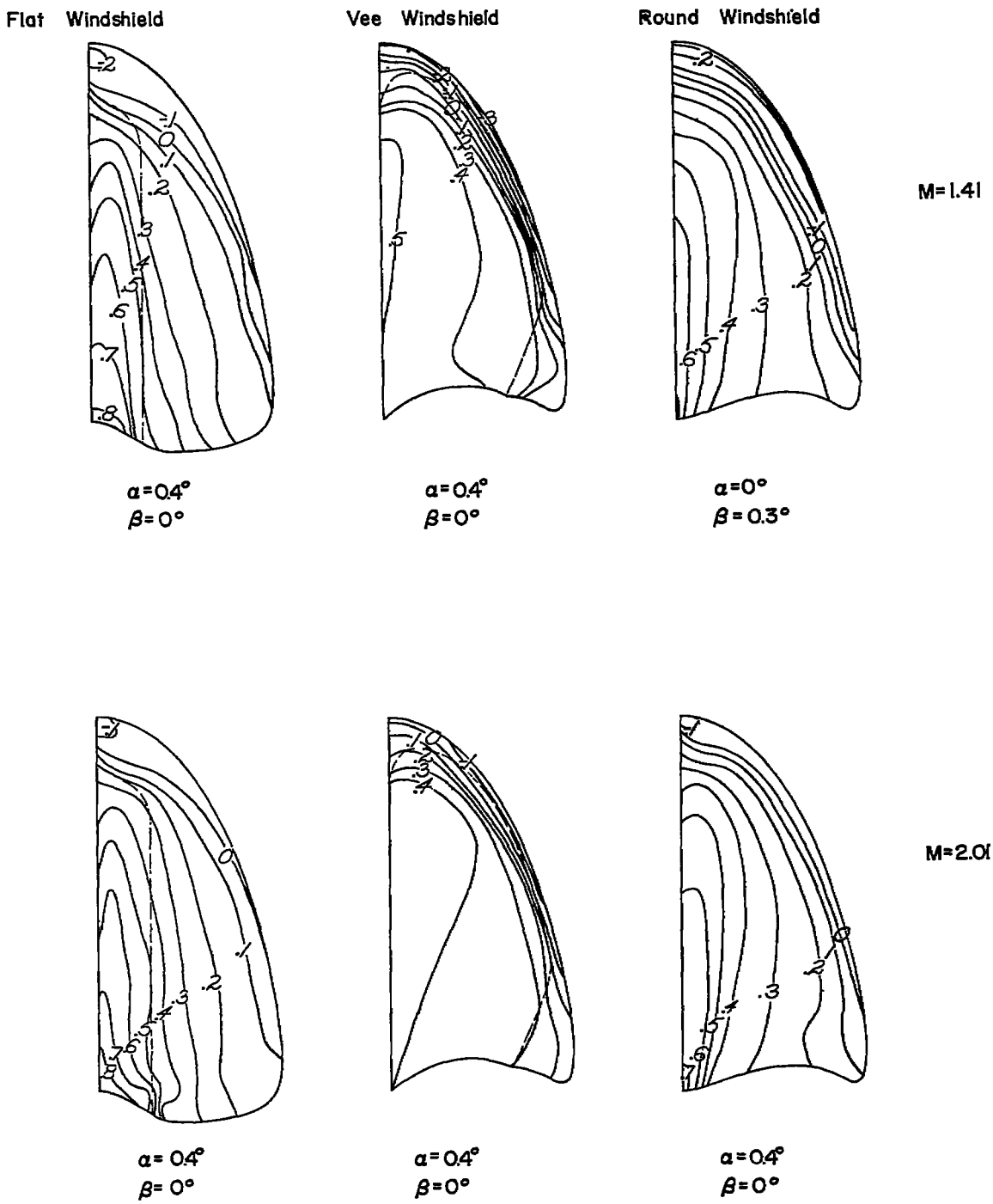


Figure 18.- Pressure coefficient contours on one-half the frontal projections of each of the large forward-located canopies for M = 1.41 and 2.01.

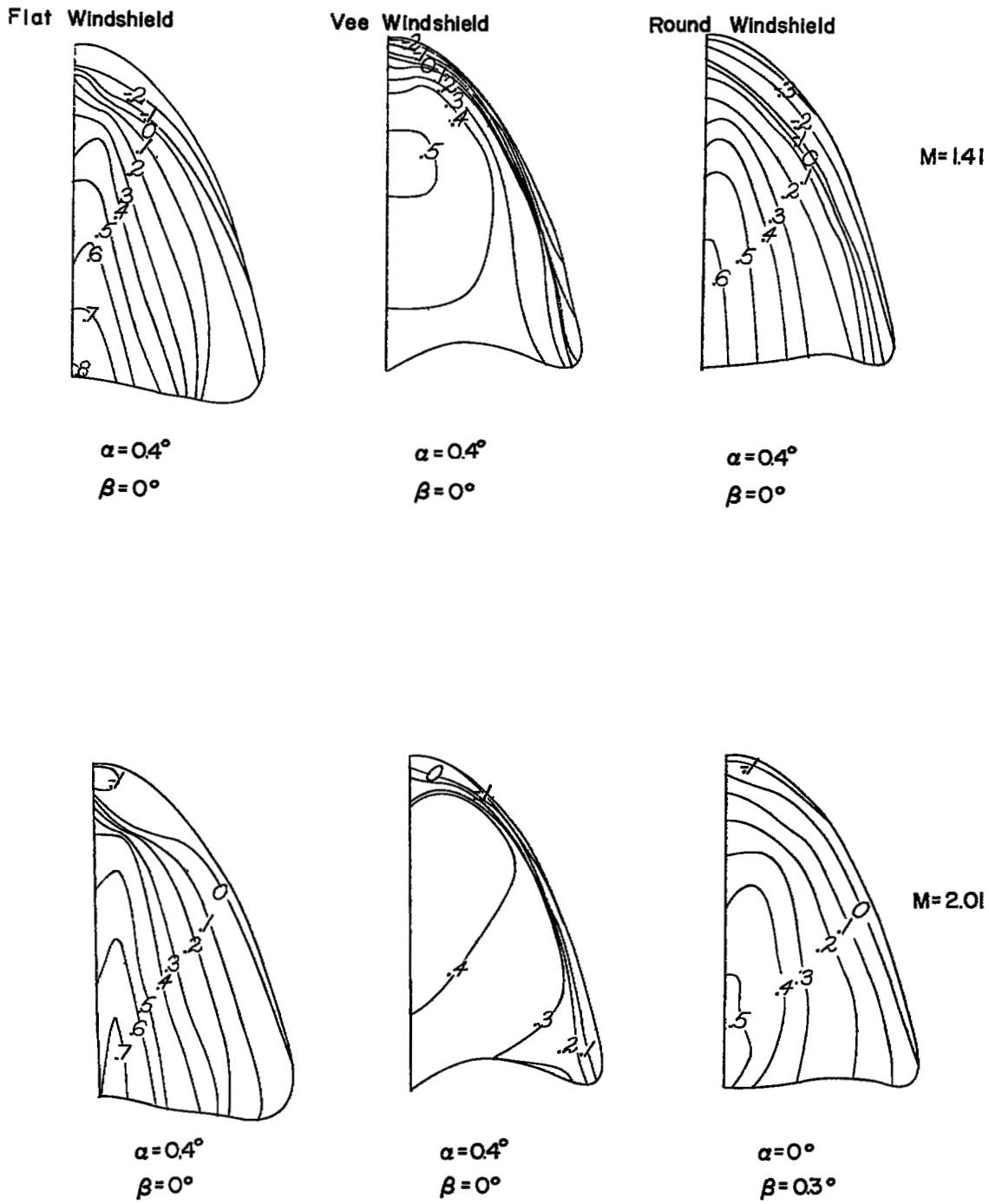


Figure 19.- Pressure coefficient contours on one-half the frontal projections of each of the large rearward-located canopies for M = 1.41 and 2.01.

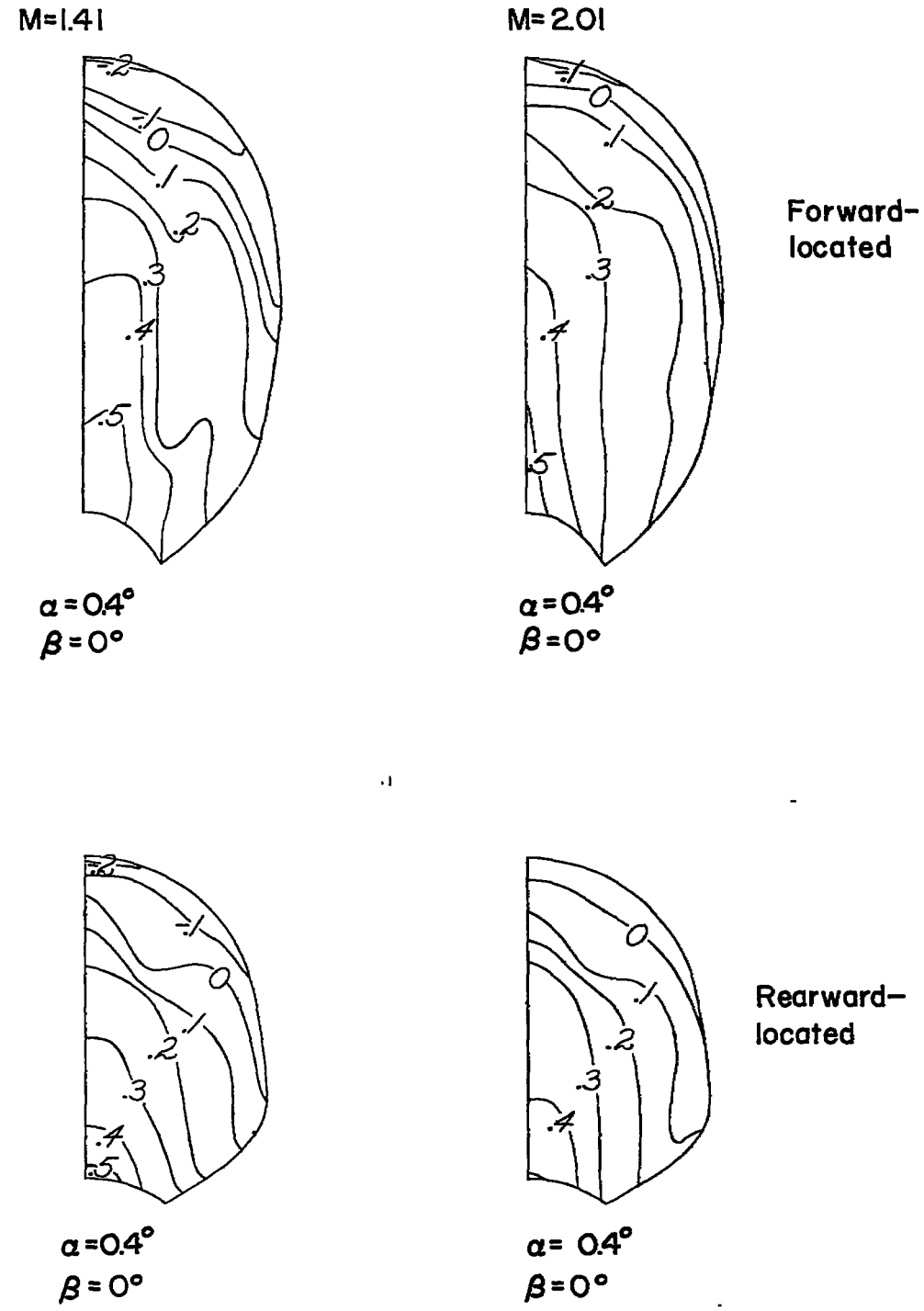


Figure 20.- Pressure coefficient contours on one-half the frontal projections of each of the small canopy configurations at M = 1.41 and 2.01.

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